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Original Articles

"RETROBULBAR AND INTRAOCULAR NEURITIS DUE TO HYPERPLASTIC CHANGES IN THE ETHMO-SPHENOID SINUSES"

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DETROIT, MICHIGAN

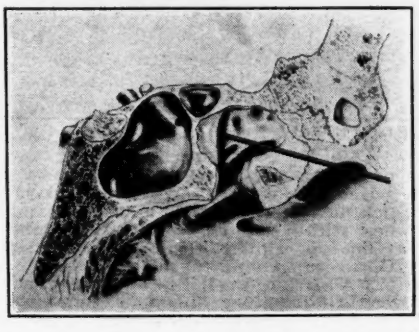
Optic nerve complications from para sinus disease are of great importance to the Ophthalmologist and Rhinologist. This is shown by many contributions to medical literature during the past decade or so. While many important advances have been made in reference to the etiology, diagnosis and treatment of this affection, yet many positive facts remain a closed chapter.

While optic neuritis is not a disease per se, it is looked upon as a symptom of some serious condition. It is therefore our duty, to ascertain the fundamental disease which is producing this affection. We must make a general examination in these cases, and leave nothing undone that would help to establish a positive diagnosis. Such a routine consists of—a minute anterior and posterior rhinoscopic examination, ocular findings, Wassermann reaction, complete urinalysis, neurological examination, and X-ray interpretation.

The causes of optic neurosis are manifold and may be either general or local. The scope of this paper will be, however, confined principally to the local condition, namely: Nasal Accessory Sinus Disease, with special reference to the hyper-plastic changes in the Ethmo-Sphenodical region.

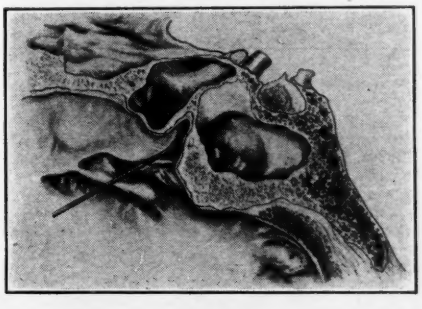
ANATOMY

Before considering the clinical phases of this subject, I should like to call your attention to four important anatomical relations which have an important bearing on this subject. First—The relation of the posterior ethmoid cells and the sphenoid sinus to the optic nerve. Second—The intimate relationship of the blood vessels supplying the sinuses and the orbit. Third—The blood supply of the optic nerve. Fourth—Size of Optic foramen and canal.



No. 1

Left Sphenoid sinus 24x21x27 m.m. Ostium Sphenoidalis 7 m.m. from roof. Optic nerve has a channel 11 m.m. long which lies forward in the superior part of the sinus. Optic canal 5 m.m. in diameter. Foramen same size. Turbinals were all atroptic. Large accessory, opening into left Max.—Opening into frontal sinus 6 m.m. F. S. extends 43 m.m. laterally above orbit. The distance from the Bulla Ethmidalis to remote part Ethmoid call was 27 m.m. The mucous membrane lining sph. sinus was adherent to the inferior part of the sinus. The bone separating the optic nerve from the sinus 1/5 m.m. thick.



No. 2

Sphenoid Sinus measured 24x11x15 m.m. Opening 8 m.m. from roof of sinus; caroted sulcus lies in Ant. and lateral part of sinus, beneath and overhanging ledge of bone. Only one large post. Ethmoid cell 12x20x11 m.m. Optic nerve passes diagonally through cell and 11 m.m. of Op. channel jutted out into the cell about 3 or 4 m.m. A deep recess extended 7 m.m. lateral and posterior to optic nerve. This contained polypoid tissue, and the membrane was thick and adherent, both to wall of sinus and this part of optic canal. This was a specimen where the bone covering the optic nerve was affected.

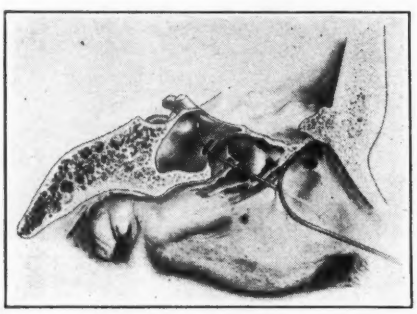
The rest of the Musoca lining this cell was very thin and peeled readily from the bone. The bony wall of ant. part of optic canal was about 1/5 m.m. thick. The post. part about .75 m.m. thick. The inflammatory process had extended through the bone, and the sheath of optic nerve was adherent to the bone at this place for 3 m.m. This is what I term circumscribed Posterior Ethmoiditis—Non-Suppurative. This would be a case where the optic nerve would be involved. This large cell opened into Ethmo-Sphenoidal recess. In such a case operative procedures would be very dangerous, and should your currette happen to find this deep pocket, the optic nerve would in all probability be severely injured or destroyed. Optic canal 6 m.m. in diameter.

Anatomic studies vividly impress one with the great variation in size and relation of these sinuses. The investigations of Onodi, Loeb, Holmes, Sluder, Schaeffer and others have established these facts. It has been definitely determined in some cases, that there is a most intimate anatomical relation existing between the optic nerve and the posterior ethmoid cell and sphenoidal sinus. From anomalous extension of these cells outward and backward they may completely encircle the optic nerve.

During my rather extensive study and careful dissection of some seventy specimens while working last year (April to August, 1922), in the Anatomical Laboratory, University of Budapest, I found some very interesting conditions. I wished to be quite familiar with this anatomical region, and was fortunate in obtaining this wonderful amount of material, which was placed at my disposal through the courtesy of Dr. F. Kiss, of the university.

Out of this number of dissections, I made the following observations:

One of the most interesting specimens which I dissected showed an anomalous extension of the posterior ethmoid cell backward and outward. The cell was very large, measuring 25 m.m. long, 22 m.m. deep and 16 m.m. wide. The optic canal passed through this cell, as shown in the drawing No. 4. The intra canalicular part of the optic nerve was 18 m.m. long, and 10 m.m. of the nerve was enclosed in a thin bony canal which lay almost free in this large cell. There was only a slight contact of the optic canal with the floor of the cell.



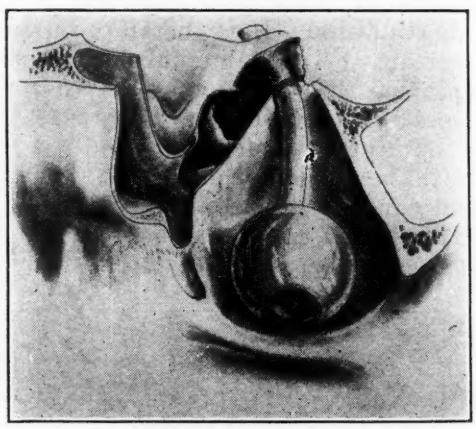
No. 3

Dimension of Sphenoid Sinus 13x16x19 m.m. Ostium 7 m.m. from floor of sinus. Optic nerve courses along superior and lateral wall of sphenoid sinus, for 9 m.m. Bone between optic nerve and Sph. sinus 1/3 m.m. thick. Ethmoidal labyrinth from Bulla to Post. Ethmoid cell measured 24 m.m. 19 m.m. deep, ant. group opened superior to Hiatus Similunaris. One large agger cell Ant. and Inf. to uncinate process.
Frontal sinus extended 38 m.m. laterally over orbit. Opened into Hiatus Similunaris, Middle turbinate cut away. Ethmoid labyrinth opened.
Accessory opening into antrum. Carotid artery not in relation to sinus. Optic canal 5 m.m. in diameter.

The sphenoid sinus was very small. It was only 5 m.m. wide and 5 m.m. deep.

I found a very intimate relationship existing between the optic nerve and the posterior ethmoid cell and sphenoidal sinuses in about 33 per cent of all specimens examined. The relationship between the sphenoidal sinus and the optic nerve was found about four times as frequently as that which was found between the posterior ethmoid cell and the optic nerve. In one specimen, I found a very large orbito-anterior ethmoid cell extending back over the orbit to its apex; and at this place, it was in intimate relation with the optic nerve.

In all these specimens, whether the optic nerve was in close relationship or not, with either posterior ethmoid cell or sphenoidal sinus, a very careful inspection of the mucous membrane lining these cells was made. If the mucosa was very thin and apparently normal, it peeled quite easily from the bone, leaving a smooth surface, which could be minutely inspected. Where the mucosa was thickened, it peeled with difficulty. It was adherent to the bone in places, especially to the bone of the sphenoid sinus. After removal of the mucosa lining the sinuses, the body walls of the sinuses were then minutely examined as to their thickness, resistance to pressure, etc. This examination applied particularly to the bony wall of the optic canal. In some specimens, (about 25 per cent), this bony partition was very thin, possibly 1/10 m.m. or thinner; though I should say that in 75 to 80 per cent of the specimens, the bone separating the optic nerve from thes inuses variedf rom 1/5 to 1 m.m. in thickness. This bony wall of the optic canal was minutely examined with a highly magnifying lens. Dehiscences occurred in only 2 specimens of my entire

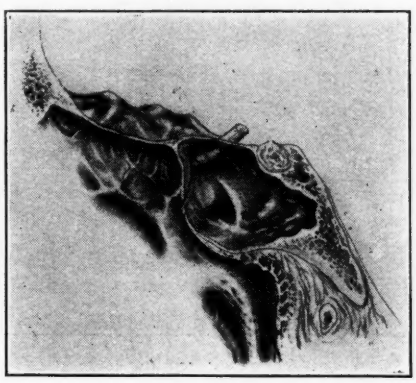


No. 4

This is a evry rare and interesting specimen. The op. nerve passes through a larger posterior Ethmoid cell which measured 25x22x16 m.m. 10 m.m. of optic canal lies within the cell. It is in slight contact only at floor of sinus, otherwise canal lies free in cell. Optic canal and optic foramen 6 m.m. in diameter. This large cell lies above as well as Ant. to a very rudimentary sphenoid sinus which was 4 or 5 m.m. in different diameters. The Ant. Ethmoid measure 25x22x8 m.m. Frontal sinus very large and opened into the Hiatus Similunaris.

series; which is less frequently than other reports have indicated. I observed in some specimens, (about 5 per cent of the total number), that the bony wall of the optic nerve showed changes which were visible to the naked eye, such as a roughness and uneven surface of part of the sinus portion. The bone was thicker in some places than in others. In these specimens, there had been definite pathological changes in mucous membrane lining the sinuses. In each of them, the mucosa was thickened and adherent to the bone, which definitely indicated a previous sinus infection.

Upon removing the optic nerve from its channel, I found evidence of pathological changes on the inner wall of the optic canal in two or three specimens. The surface of the bone was slightly rough, showing that some inflammatory process had affected the bone, and had extended through it. The periostium and dural sheath of the optic nerve were more adherent to the bone at the place where the bone was affected, showing that they, too, had been affected. In two specimens, the bone separating the optic nerve from the sinuses, was about .75 m.m. thick. The sinus portion was affected opposite the place involved, on the inner side of the optic canal. The inflammatory process had extended through the bone at this place. place. In another specimen, where the optic



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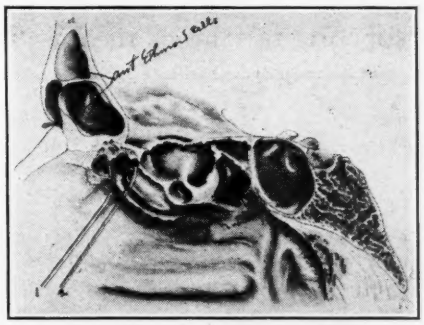
Rt. Sphenoid Sinus measured 33x24x14 m.m. Very large pockets on the lateral wall. Ostium only 3 m.m. from roof of the sinus. The optic nerve runs along the sup. and lateral wall of sinus for 10 m.m., jutted into sinus 3 m.m. Part of bone between Op. nerve and sinus removed .25 m.m. thick. The carotid Sulcus and canervous sinus were in very close relation to lateral wall of sphenoid—the mucosa in this specimen showed a chronic fibrous thickening in lower and posterior part of sinus; membrane very adherent and bone rough. Wall of optic canal affected only in one place. Ethmoid labyrinth 34x13x12 m.m. Antrum measured 28x22x21 m.m. Optic canal 5 m.m. in diameter.

nerve was not in relation with either sinus, I noticed a thickened place on the inner wall of the optic canal, resembling a slight exostosis. It was 2 or 3 m.m. long. At this place, the diameter of the optic canal was reduced almost 1 m.m. I found, also, that the optic canals did not always appear to be of the same diameter throughout their entire length. The difference was very slight, however.

Such changes in the optic canal are no doubt responsible for many abnormalities of vision, which never show any improvement, regardless of the treatment. Optic atrophy, partial or complete, could easily be produced by such conditions. The fibers of the optic nerve may be destroyed by pressure alone, without any infection. Furthermore, I believe, that a chronic sinus affection, or any long continued inflammatory process which has extended through the bony wall of the optic canal, can produce an optic nerve involvement, such as retrobulbar neuritis, papillitis or choked disc.

A second consideration is the intermingling of the blood as it circulates between these sinuses and the orbit. This is principally through the ethmoidal arteries and veins, and the diploic veins of bony walls of the orbit and sinuses. Thirdly—We must consider the role played by the blood sup-



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Rt. Sphenoid Sinus dimensions 18x25x10 m.m. Optic nerve passes through ant. sup. angle of sinus. 6 m.m. optic canal bulges into sinus 2 m.m. Carotid Sulcus in relation to the post. sup. part. Very thin bone less than 1/5 mm. separating optic nerve and ant. carotid artery from sinus mucosa. Sphenoid opening 8 m.m. from roof. Rt. middle turbinal removed. Bulla Ethmoidal is not opened. Two very large ant. ethmoid cells as shown, extends from gabella laterally over orbit for 23 m.m. At first this cell was mistaken for frontal sinus. The opening of this large ant. ethmoid cell lies 6 m.m. post. to frontal sinus opening. There are three posterior Eth. cells opened. Three ant. ones, and one very lart ant. Eth. cell not opened. Hiatus semilunaris ends in large ant. Eth. cell. Frontal sinus opened into a dilated like pouch 8 m.m. above the hiatus semilunaris. One large agger cell ant. to uncinate process. The opening from large ant. Eth. cell is above the bulla. The Eth. Lab. 50x20x9 m.m. Frontal sinus is 33x26x6 m.m. Probe No. 1 in frontal sinus. Probe No. 2 in orbito-ant. eth. cell. This side of nose did not contain any connection between cells and cerebro-spinal region as did the right side. Cribiform plate of Eth. bone present on this side. Optic channel 5½ m.m. in diameter.

ply of the optic nerve, in the transmission and production of diseases of this nerve. The orbital part of the optic nerve is supplied by the central artery and vein of the retina, while the canalicular portion is supplied by a small branch of the ophthalmic artery, and the vein of Vossius carries the

blood from this part of the optic nerve to the cavernous sinus. There are numerous anastomoses between the small branches of this vein and the diploic veins from the bony walls and periosteum of the sphenoid sinus and posterior ethmoid cell. This part of the nerve, due to its tight bony wall, has a particular predisposition to morbid changes.

ETIOLOGY

Upon these anatomic facts, we base our theories regarding the etiology of optic nerve involvement from sinus disease. How does this infection take place? That is not definitely known, though it is supposed to be in the following manner:

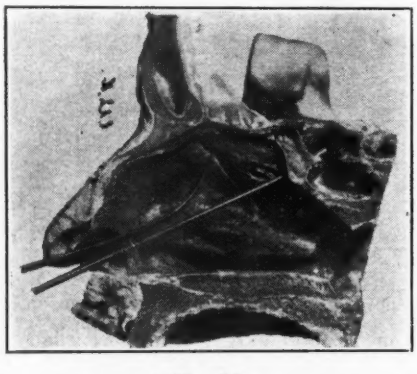
First. Through the blood stream and lymph channels.

Secondly. By direct extension of the inflammation or infection.

Third. By pressure upon the intra-canalicular portion of the optic nerve, from thickening of the bone due to periostitis, an ostitis; or edema of soft tissue.

Fourth. By absorption of toxins from a local cell or cells, or by toxemia from remote sources.

In support of these theories, Gradle



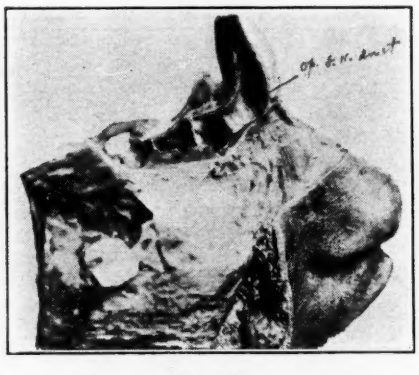
No. 8A

Rt. Sphenoid sinus is divided into two parts; a superior part measuring 18x10x8 m.m. The inf. part 20x11x7 m.m. There was an opening 2 m.m. in diameter between the two parts. It was situated 3 m.m. from the ant. wall of sinus. Post. ½ of the partition was bony; ant. ½ was membraneous. The sinus extended across the median line, and the two cavities shown in picture No. 9 are the parts of the rt. sphenoid sinus, though they are shown as being on the left side. The optic nerve is not in relation on rt. side. The mucosa lining the sinus was thickened and fibrous and very adherent to the bone in the inferior part. There were polypi in this part of the sinus. None in the superior part. Ostium about the center of anterior wall, but opening into superior part. The right middle turbinate has been removed. Ethmoid labyrinth not opened. Uncinate process beautifully demonstrated. Small ethmoid labyrinth 18x11 m.m. The probe shown in photo, passes into left frontal sinus. This part of frontal sinus shown in picture is the left one. The opening from the left frontal sinus enters the right side of the nose 2 m.m. superior to the right frontal duct. Both open into the hiatus semilunaris.

states, "The anatomical relations of the sphenoid or posterior ethmoid cell to the optic nerve are immaterial, and the infection is transmitted through the venous and lymph channels to the optic nerve." Onodi and Loeb think that the anatomical relation of ethmoid and sphenoid sinuses to the optic nerve are very important. Onodi says, "Canalicular neuritis may be excited by an inflammatory process and can be directly transmitted through the walls of the optic canal to the sheath of the optic nerve."

Krause and Elliot are of the opinion, that toxic absorption from a local infection in the ethmoids is the principal etiological factor in their cases. Bordley believed that mechanical pressure on toxemia are the most important factors in producing the symptoms in his cases; while Stark believes that pressure alone is responsible.

Anatomical observations prove very conclusively to me, that the relation between the posterior ethmoid and sphenoid sinuses is very important. Any chronic irritation of the posterior ethmoid cell or sphenoid sinus, with or without suppuration (especially where there are bone changes, such as an osteitis or hyper-plasia), is sufficient to cause an involvement of the optic nerve. For when these changes appear in the wall of the optic canal, the nerve can be affected by direct extension of the inflammation through the bone; as the place where the process penetrates the canal wall, is also the point of contact with the sheath of the optic nerve. And when the nerve becomes



No. 8B

This specimen is the orbital and external view of No. 8A. The ethmoid labyrinth has been exposed, after removing the lamina papyracea. The frontal sinus has been opened externally to indicate the opening of the fronto-nasal duct. The fronto-nasal duct opened normally into the hiatus semilunaris about 2 m.m. below the opening of the left frontal sinus.

affected at this place, it produces an interstitial optic neuritis.

We know that hyper-plastic changes in the mucosa lining these sinuses, with or without an exudate, generally indicate a partial or complete closure of the olfactory fissure, which in turn, may produce marked occular symptoms. This particular form of sinus infection may exist indefinitely, without engaging the attention of either patient or physician. Yet this type of nasal infection gives us much more concern, as irre-

parable damage may be done to the optic nerve before the existing condition is recognized and proper treatment instituted.

CASE REPORT

W. C. T., age 26, electrician, referred to me March 1, 1921, by Dr. L. T. Clark of the research department of Parke Davis & Co. Patient complained of blurred vision of right eye, and a black spot in his field of vision. About three weeks before I saw the patient, he accidentally discovered this defect in vision. He did not know how long his vision had been defective, but supposed it came on suddenly. Black spot was noticed about a week before I saw him. He had no headaches; only slight pain with pressure over eye balls; tension normal. Pupils practically equal, round and reactive. The right, slightly sluggish in reaction. Gave history of having frequent colds, but never any purulent nasal discharge. Denied any venereal infection; was well nourished and healthy in appearance.

EXAMINATION

Nasal, right side: Septum slightly bulging high up. Small ridge near floor of nose. Neither in contact with lateral wall of nose. Anterior end of right middle turbinate was enlarged. The mucosa covering it was thickened; granular in appearance; was dull and lusterless. On pushing the turbinate to the lateral wall of nose, the mucosa was affected as far as I could see. Upon lifting the turbinate upward and toward septum, some changes were discovered extending toward the sinus region. No pus or palypi were found. Inferior turbinate somewhat turgescent. The left nares did not present the same picture. The mucosa over the left middle turbinate had a normal, pink, glistening appearance. Slight bulging of septum high up, though not in contact with middle turbinate.

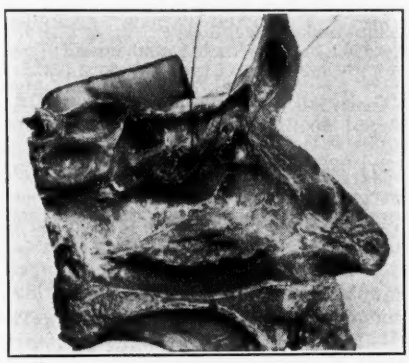
Ophthalmascopic Findings—Frank optic neuritis of right eye, disc slightly blurred, margins indistinct. Arteries slightly contracted, veins correspondingly engorged, but not tortuous. Otherwise, fundus normal. Left fundus normal.

Field of Vision—Concentrically contracted for colors. Absolute scotoma for white and colors. Para central scotoma, temporal side, enlargement of blind spot. Left field normal. O. D. V. 20/50, O. S. V. 20/30. Clinically, I made a diagnosis of a hyperplastic ethmo-sphenoiditis. Was this sinus affection producing the optic neuritis?

Differential Diagnosis—What was producing this nerve affection? The first thing to exclude was syphilis. The case had been previously diagnosed as a luetic neuritis, though no therapeutic test had been made to substantiate this diagnosis. On March 1st, blood Wassermann was made. Reported negative. Spinal fluid was now examined. It was also negative. Syphilis was therefore excluded.

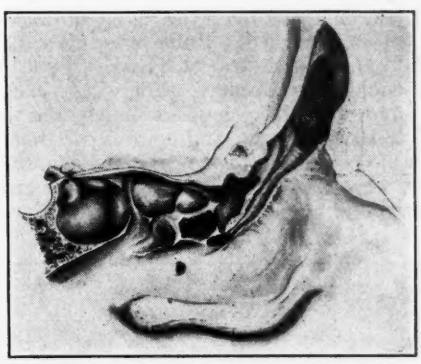
Second: Toxic amblopia must be considered. Patient smoked moderately, drank very little; nothing to indicate such a condition in this particular case.

Third: Some nervous affection, as multiple sclerosis, was also considered. Patient referred to Dr. Irvin H. Neff, on March 3rd, for neurological examination.



No. 9. Left Side of No. 8A

The double sph. cavity shown here is the rt. sph. sinus and belongs to the rt. sph. sinus already pictured in 8A. The left sph. sinus was very rudimentary and deeply situated in body of the sph. bone. It was placed laterally and slightly inferior to the sup. part of the rt. sph. sinus. It was about 5x5x4 m.m. A small duct 4 m.m. long led from this pocket sinus, and opened into the eth. sph. recess. The left optic nerve was separated from the sup. part of the rt. sph. sinus by about ½ m.m. thickness of bone. The mucosa of this particular part of the optic canal was thin and peeled readily from the bone. About 3/5 of the left frontal sinus is shown in picture. 2/5 extends across median line to the rt. side. There was a total absence of any opening from this sinus into the left side of nose. The fronto-nasal duct from this sinus opened directly into the hiatus semilunaris of the right side of the nose as shown by probe in picture 8A. The left middle turbinate removed. Soft tissue removed from inferior turbinate and the rest of the lateral wall of the nose shows a very complex arrangement of ethmoid cells. Bulla ethmoidalis opened. Anterior to the superior part of the uncinate process a large agger cell has been opened, 4 large, deeply and laterally placed anterior ethmoid cells not opened. One large anterior ethmoid cell extends high along the orbital margin of the frontal sinus. The dimensions of the whole ethmoid labyrinth are 30x20x11 m.m. The greatest diagonal distance was about 45 m.m. This was a very large ethmoid labyrinth as compared to the ethmoid labyrinth of right side of the nose.



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Left Sph. Sinus 18x15x6 m.m. Optic nerve is in intimate relation at the post. sup. angle of the sinus for 7 m.m. The mucosa lining the sinus was adherent to the bone in the inf. part, also in the angle between the carotid sulcus and optic nerve. The bone was thicker along the inf. canal wall, than on the ant. part where the mucosa peeled off, leaving the bone smooth. Ant. wall of optic canal was 2/10 m.m. thick. The Eth. lab. very large. Three large post. Eth. cells opened. Mucosa was thick and adherent to the bony wall of post. cell of this group. The post. group measured 20x14x8 m.m. There are five ant. cells; 3 opened; one very large ant. cell extended 35 m.m. laterally. The roof of this cell formed the greater part of the floor of the ant. fossa of the skull. This plate of bone 3/10 m.m. thick. Frontal sinus 29x40x11 m.m. and opened directly into hiatus semilunaris. A polypoid mucosa was present in frontal sinus. Two opening into antrum. One in the infundibulum; the other 10 m.m. post. and inf. to natural opening. The cribiform plate of Eth. bone was absent in this specimen. A slit in the Eth. bone 4½x17 m.m. long contained the olfactory bulb and nerve. The filament of the olfactory nerve could be beautifully dissected. There was also a direct communication between the nose and subarachanoid space of the brain. Unfortunately, this anomalous condition was not seen in time to give a detailed description of the formation of this connection: however, there existed a distinct connection. This would easily explain the presence of cerebrospinal fluid in the nose. Optic canal 5.75 m.m. wide. Sph. opening in center of ant. wall of sinus.

Any and every possibility of this latter condition was excluded.

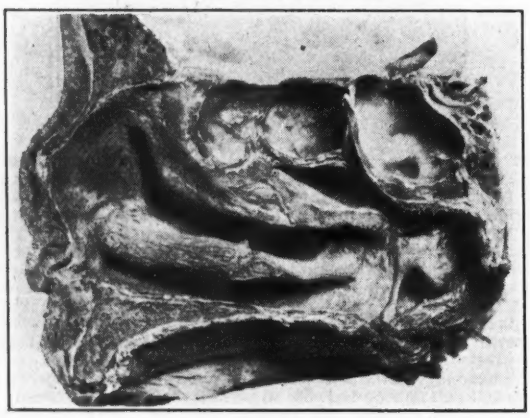
On March 2, Dr. E. J. Bernstein had seen the patient. He verified my diagnosis and was also of the opinion that the optic neuritis was due to some sinus infection.

Patient referred to Doctors Hickey and Evans for X-ray examination of the nasal accessory sinuses, on March 2. Their report was negative. This, however, did not exclude the existence of a sinusitis. (Many cases have been reported where the X-ray findings were negative, but a hyperplastic sinusitis was present. Even pus in the sinuses is not always discovered by X-ray examination.) While the X-ray did not help the diagnosis in this case, yet it must always be considered.

On March 4, patient was admitted to Harper Hospital. He said he could not see so well this morning, with right eye. O. D. V. 20/80. O. S. V. 20/30. After dilating pupils with Homeatropine, the fundi were again carefully examined. I noticed that the nerve head was badly swollen and much more edematous, almost obliterating the vessels of the disc. At this time, there were four small hemorrhages in optic disc; these were not present the day previous. The arteries over the fundus were more constricted and the veins more engorged than on previous examinations. Dr. Frothingham was now called in consultation. He very carefully examined the patient's eye grounds. He diagnosed a choked disc of right eye. Left eye normal.

Operation—Gross and microscopical findings: After detaching right middle turbinate from lateral wall of nose, about 2/3 of the bone was snared off. On inspection, the mucosa over the bulla ethmoidalis appeared to be thickened. Bulla was opened and the ethmoids exenterated, especially the posterior cells. The sphenoid was opened. There was no pus or polypi. However, the mucosa lining the posterior ethmoid cells was thicker and more dense than normal.

These pieces of mucous membrane and the middle turbinate, were sent to the laboratory for microscopical examination. The mucosa from the posterior ethmoid cells showed marked round cell infiltration and considerable fibrous tissue. The section from mucosa of middle turbinate showed similar changes. Bone changes, if any, in the turbinate, were not satisfactorily shown.



No. 17

Right sphenoid sinus measured 21x20x11 m.m. Opening 4 m.m. from roof. Mucous membrane thick and adherent to almost the whole of the sinus wall. It was adherent to the wall of the optic nerve. The optic nerve courses along the lateral wall of the sinus. Bone separating sinus from optic nerve, 5 m.m. thick. It was rough and indicated it had been affected. The ethmoid labyrinth opened. Only 2 anterior and 1 large posterior ethmoid cell. Mucosa was adherent to the wall of both cells, more especially the post. one. Dimensions of the Ethmoid labyrinth 35x18x12 m.m. Upon lifting the anterior end of middle turbinate, a very large bulla ethmoid alis could be seen. Also the frontal sinus opening directly into hiatus semilunaris, and the opening of maxillary sinus located in the infundibulum. The optic canal 4½ m.m. in diameter.

Patient remained in hospital for three days. During this time, there was little or no improvement. The next day after irrigating his nose and removing some blood clots from the posterior ethmoidal region, his vision began to improve. On the fifth day, patient noticed quite an improvement in his vision. At this time O. D. V. 20/60+. Ophthalmic examination showed the papilla much less swollen. Margins of disc were clearing up, and the small hemorrhages in the disc were becoming absorbed. Within 10 days after the operation, there was almost complete involution of the neuritis. The small hemorrhages had all disappeared, and the margins of disc were quite distinct. The arteries were yet slightly constricted, and the fundus was somewhat paler than normal; though otherwise negative. Patient said the scotoma was more faint, and was clearing in the center.

March 25—O. D. V. 20/30-2; O. S. V. 20/30+. Margins of right disc more sharply defined. Slight pallor of disc. Arteries seemed less constricted than they were on previous examinations.

Nasal examination showed a very satisfactory condition. There was no indication of pus in his nose, and I had never seen any. The opening made in the sphenoid had almost closed; only a small probe entered the sphenoidal sinus.

April 1—O. D. V. 20/30-2; O. S. V. 20/30+. Condition about the same.

April 10—Disc margins very distinct, disc had a slightly paler color, suggestive of some secondary optic atrophy. Refracted patient; cycloplegic used.

Rx—O. D. —50C-25x135=20/20+2
O. S. —50C-25x180=20/20+4

April 28—Small scotoma persists. Slight enlargement of blind spot. Very little, if any improvement in optic disc. Progress seems to have reached its limit. O. D. V. 20/20; O. S. V. 20/20. Decided to do submucous today.

May 10—Eye grounds about the same as they were before submucous. Some secondary optic atrophy; not enough to affect his vision. Scotoma persists, also some enlargement of blind spot. Retinal arteries slightly constricted, vision normal with glasses.

May 25—No further changes in disc, atrophy not progressing. Scotoma is much less than any time since operation. Blind spot about the same, vision more acute. O. D. V. 20/20+ with glasses.

June 15—O. D. V. 20/20+ with glasses. Atrophy not progressing. Retinal arteries are still constricted. Fundus slightly paler than normal.

Juuly 1—O. D. V. 20/20+; O. S. V. 20/20+, with glasses. No change in disc or fundus. Field of vision still contracted for colors. Atrophy not progressing. Blind spot remains enlarged.

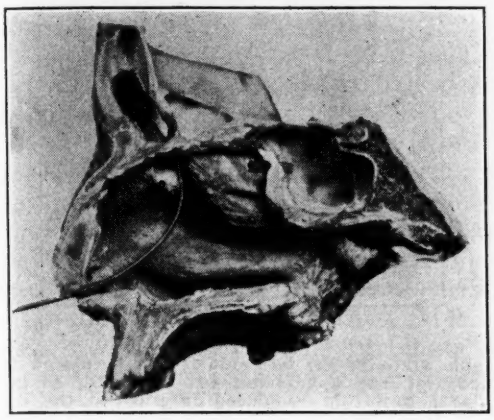
July 15—Today there is a beginning yellowish exudate adjacent to upper temporal border of disc. No other changes. O. D. V. 20/30—; with glasses 20/20+. O. S. V. 20/20+.

July 30—Area of yellowish exudate has slightly increased in size, about 1/3 size disc. Vision remains the same. No progressive changes in disc.

August 6—Condition about the same. Retina has slight pale color, but fundus is otherwise normal. No change in vision.

August 9—Patient went to Chicago for two weeks vacation. Had him see Dr. Harry S. Gradle. Dr. Gradle reports the following: "Externally both eyes normal. Pupils equal, round and reactive. Right eye: secondary optic atrophy. Adjacent to the upper temporal border of the disc is an area of organizing yellowish exudate about ½ D. D. in size. This corre-

sponds fairly accurately to the scotoma. The retinal arteries are constricted. The retina is somewhat pale, but the fundus is otherwise normal. The blind spot showed enlargement.



No. 21

Sphenoid sinus 31x24x20 m.m. Opening 8 m.m. from roof. The anterior wall of sphenoid sinus extended much further forward than normal, projecting anterior almost 1/3 the length of the middle turbinate and ½ of superior meatus. The mucosa lining the sinus peeled readily from the bone. The optic nerve passed diagonally through the superior and lateral part of sinus for 10 m.m. About 2/3 of the channel jutted out into sinus. The bone forming the anterior part of optic channel about 1/10 m.m. thick; posterior part 1/3 m.m. thick. The ethmoid labyrinth not opened intra nasal; anterior and posterior ethmoid cells opened extradural. You see and understand how the roof of these cells can form the greater part of the floor of the anterior fossa of the skull. The dural measurements of the anterior ethmoid cells, 18x35x6 m.m. The posterior cell 6x13x4 m.m. The anterior end of the middle turbinate cut off to show the opening of the naso-frontal duct. It appears to have opened into the hiatus semilunaris. It does not, its opening is 4 m.m. sup. to the hiatus as the hiatus ends in a blind anterior ethmoid cell. Frontal sinus 14x31x22 m.m. The carotid canal is also in relation to the posterior and lateral wall of the sphenoid sinus. Opening into maxillary sinus closed due to some chronic inflammatory condition. Optic channel 4¾ m.m. in diameter.

The right eye evidently has had a most severe neuritis, both retrobulbar and intra ocular; that, without doubt was due to the ethmoid and sphenoid trouble. Fortunately you found it in time and did the correct thing to avoid much further trouble. There is no active process present now, but I believe the resorption can be helped by 10 drops K. I. t.l.d. and 1/100 gr. strychnine injected bi-weekly in the right temple.

Please accept my thanks for referring him to me, as well as my congratulations on the splendid results you have obtained. Only too many of such cases are overlooked until they are hopeless."

August 28—Patient reported to office. I began the temporal injection of 1/100 gr. strychnine bi-weekly. I had already given K. I., but gave it again; I kept up this treatment until the 15th of October. During this time, I could not see any further improvement, except possibly his vision seemed to be more acute. O. D. V. 20/20+. O. S. V. 20/20+, with glasses.

January 5, 1923—O. D. V. 20/20+; O. S. V. 20/20+, with glasses. During my absence abroad, patient received no treatment in reference to his eye. I cannot detect any changes in this fundus of his eye since October 15, 1921, except that the area where the exudate occurred shows degenerative changes of retina with some pigmentation. Area about 1/3 size D. D. Visual field still contracted, though not so much as when I last saw him. Blind spot not so large as in October, 1921. Scotoma present. I wanted to reopen sphenoid to see if any further progress could be made. Patient refused operative interference.

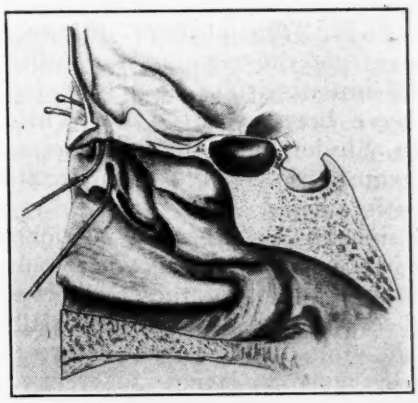
September 8, 1923—It has been two and one-half years since the patient was referred to me. During this time, I have seen the patient a great many times and have watched the case very carefully. I have mentioned only a few of the times he reported to my office; however, I have reported the condition just as I have found it, and at frequent intervals, so as to make my record complete, though not too cumbersome.

A careful ophthalmoscopic examination of right eye today shows the same condition as reported January 5th, this year. There still persists a scotoma. His visual field about the same. The blind spot is slightly smaller than it was in January, though it shows some enlargement.

Patient refused to have any more surgical interference, as he said he was very well pleased with the results we obtained. He claims his vision is just as acute with the right eye as with the left, and he was satisfied to leave well enough alone. O. D. V. 20/20+. O. S. V. 20/20+, with glasses.

DIAGNOSIS

Ocular findings—Could all these severe intra-ocular changes and symptoms be produced by a nasal infection, such as a hyper plastic ethmosphenoiditis? I believe they were. However, all cases do not present the same picture. Your opthalmoscopic



No. 23

Body of sphenoid very thick and cancellous sph. sinus measured 14x9x17 m.m. The optic nerve coursed along the lateral wall of sinus for 12 m.m. This part of optic canal jutted into the sinus 2 m.m. The bone separating the optic nerve from sinus was 1/10 m.m. thick. This was one of the two specimens presenting a dehisence in my series of more than 70 specimens. The dehisence could be seen only with a magnifying lens. The mucosa peeled very easily from this part of sinus wall, sph. opening 4 m.m. from roof of sinus. The ant. ½ of middle turbinate has been cut off, showing large bulla, the hiatus semilunaris ending in an ant. ethmoid cell and opening of the frontal sinus located 6 m.m. above the hiatus semilunaris. The frontal sinus on this side was divided into two distinct and separate sinuses, each one having a separate opening into the nose, as shown by the probes in the picture. The external part measured 15x30x16 m.m. The internal part was 17x16x6 m.m. After making a saggital section through the ant. part of this specimen this arrangement of the frontal sinus was discovered. Also I noted a large ant. ethmoid cell between the lower one-half of ext. part of frontal sinus and orbit which extended laterally 28 m.m. The roof of this cell formed part of the floor of the ant. fossa of the skull. It is interesting to note also the position of the sella tercicia. It is post. and slightly inferior to the sph. sinus, being separated from the sinus by 3½ m.m. thickness of the bone. Optic foramen and canal 4 m.m. in diameter.

findings may vary from only a slight hyperormia of the disc, to a papillitis, choked disc or, finally optic atrophy. These changes will depend upon the severity and the course of the infection.

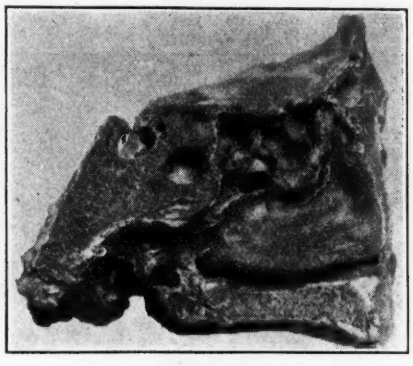
Perimetric findings:

(a) Central scotoma, 1st for colors, later for white.
(b) Enlargement of the blind spot.
(c) Contraction of the field of vision, especially for colors.

Speaking from the ophthalmologist's view point, Von der Hoeve says, "A central scotoma, enlargement of the blind spot and contraction of the field of vision, are very important symptoms and they indicate that the optic nerve is affected. They show us the optic nerve is diseased, but teach us nothing of the origin of the infection. We must always consider that every retrobulbar or intra-ocular neuritis may begin with these symptoms, whether it is caused by a multiple sclerosis, by syphilis, tuberculosis, adental infection or from a nasal infection. Therefore, the ophtholmologist has in the eye, no sign to distinguish the origin of a retrobulbarn neuritis."

From the rhinologist's stand point, MacKenzie says, "The absence of any sign of disease inside the nose is not sufficient to exclude sinusitis from the diagnosis." Many cases have been reported by White, Vail, Skillern, Sluder and others, where repeated nasal examinations have been negative, yet a sinusitis existed. We can have a circumscribed sinustitis in either a posterior ethmoid cells or in the sphenoid sinus where only a part of the mucosa lining of these cells is affected. I found several such instances, especially in the sphenoid sinus. This was determined by thickened mucosa being adherent to the bone. The mucosa was thick in these places as compared to the very thin normal mucosa lining the rest of the sinus. The thickened mucosa was not always adherent, unless the bone had been involved. Sometimes the mucosa lining the whole sinus was thickened and fibrous. In such cases, your rhinoscopic examination will be negative, unless the middle turbinal is involved. (I mean the hyper plastic type of infection without pus).

The X-ray, as already mentioned, may not be of any diagnostic value, yet it must always be considered. Von der Hoeve stresses the importance of the images of the optic foramen. He says, "If I find a normal foramen, I do not believe the canal can be much deformed. However, great care must be taken not to misinterpret a picture, which may be the result of a wrong position." He recommends Rhese's method for demonstrating the optic foramen and superior orbital fissure; and cites a case of a physician who had a retrobulbar neuritis and



No. 24

The sph. sinus of the left side is deeply placed in the body of the sph. bone. It is small, measuring 10x8x8 m.m. It is placed inferior to the depression from the right sph. sinus which extends across the median line to the left side. You also note the position of the sella tercicia. There is 5½ m.m. of bone between it and the sinus. The pituitary gland which occupies the sella tercicia is almost entirely surrounded by bone. This would be a condition where most severe headaches would be the result of the anomolous anatomical formation. The optic nerve was not in relation to the sinus. The middle turbinate has been removed and the ethmoid lab. opened. The bulla ethmoidalis is very prominent. There are three posterior ethmoid cells, one above and two inferiorly placed. The ant. group consists of three cells which were opened. The ethmoid labyrinth measured 31x24x12 m.m. The frontal sinus opened directly into the hiatus semilunaris. The frontal sinus measured 18x11x18 m.m. It was divided into two distinct cavities, the outer one being a closed non-communicating cavity. Both a saggital and a longitudinal section is shown here, though it does not demonstrate what the author had in mind when the specimen was sawed in this manner. I should like to call your attention to the very thick septum of bone separating the anterior from the posterior ethmoid cells. This bone measured as much as 3 m.m. in thickness. The septa between the ant. ethmoid cells was also about 1 m.m. thick, which is much greater density than normally exists in the ethmoid labvrinth. The mucosa lining the cells was very adherent and showed a chronic thickening with polypoid degeneration.

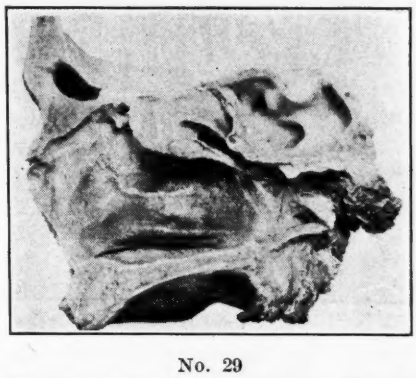
choroiditis and who had been operated upon several times for some sinus disease. When he (Von der Hoeve) saw the man, he found a huge enlargement of the blind spot, especially for colors; nad a hyperamic disc. X-ray showed a clear ethmoidal region, except a rectangular spot close to the optic foramen and superior arbital fissure. De Kleyn opened, at that spot, some posterior ethmoid cells in which he found some purulent secretion. From that time, the man was relieved of all symptoms.

The case I have reported, has an enlargement of his blind spot; an absolute scotoma; a slight optic atrophy; and some constriction of the retinal arteries. His vision, however, is normal with glasses. He had two operations. Ethmoid exenteration and opening of sphenoid; later, a submucous. I have no information about the optic foramen, as the patient did not return for another X-ray examination. This may be a case where there is some abnormality of the optic canal, or optic foramen, and these symptoms in such a case, would be irrepar-

able, regardless of what was done. It is also possible to assume that I never opened all the posterior ethmoid cells. Maybe I should have made a much greater opening into the sphenoid sinus. This is speculative, however.

We must, however, take into cognizance the hyper plastic changes that had already taken place in the mucosa lining the posterior ethmoid cells, as shown by a microscopical examination. The mucosa covering the right middle turbinal presented a microscopic appearance of hyper plastic changes. Would it not seem plausible to assume the sinus mucosa was the primary site of the infection, and that later the mucosa covering the middle turbinate was attacked? The mucosa lining the posterior ethmoid cells was thickened and fibrous. How much, if any, bone changes were present, I do not know. The mucosa was not removed from the sphenoid sinus.

There is a marked difference of opinion, however, in referenec to retrobulbar and intra-ocular neuritis and choked disc being caused by hyper plasia of the mucosa lining the sinuses, particularly, in the absence of an active suppuration. Sluder and Wrights' observations and research have convinced them, that optic nerve complications are caused by a hyper plasia of the lining mucosa; and that this nerve involvement, be it a retrobulbar neuritis, papillitis or choked disc, is due to a long continued pressure which slowly develops. Cushing states that the hyper plasia of the mucosa is quite incapable of producing a retrobulbar neuritis, papillitis or choked disc. White is quite emphatic in his views, believing that pressure on the optic nerve from hyper plasia of the sinus mucosa *does* produce optic nerve complications, and much more often than they are recognized. White cites a number of cases where he attributes the optic nerve involvement to hyper plasia of the sphenoidal mucosa. Onodi states that pressure upon the nerve, itself, from hyper plasia, or upon the nutrient vessels supplying the nerve, will occasion visual disturbances.



No. 29

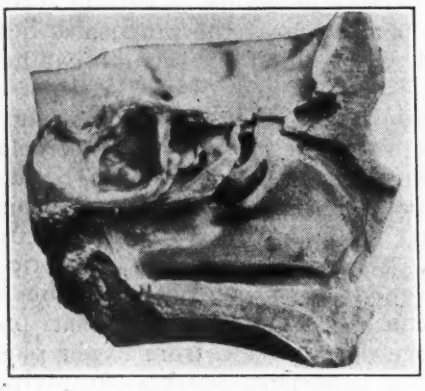
The right sph. cavity is very large. Has 2 pockets, one very deep recess. This was filled with polypoid degenerated mucosa which was very adherent to the bone. The sinus measures 31x22x20 m.m. in the deepest recess. The bone showed distinct chronic inflammatorycha nges. There is a very intimate relation between this sinus and the optic nerve. The nerve passes obliquely along the roof and the lateral wall of the sinus, 7 m.m. of the optic channel lies within the sinus. It jutted into the sinus 3 m.m. The mucosa along the posterior part of the optic nerve was slightly adherent to the canal wall. The mucosa over the anterior part of the optic canal was very thin. The anterior one-half of the middle turbinate was removed and lateral wall covering the post. one-half of the turbinate and lateral wall of nose was removed. There were 3 distinct openings from the posterior ethmoid group into the superior meatus of the nose. In the anterior group there were 2 openings posterior to the bulla and one anterior to the bulla, leading into a very large orbito-anterior ethmoid cell. This opening was 3 m.m. posterior to the opening leading to the frontal sinus. The sinus pictured in this specimen, which anyone would think was the frontal sinus, is the large orbito-ethmoid cell. It measures 16x24x22 m.m. The bone separating the dura from this cell was about 1/3 m.m. in thickness. The right frontal sinus was very small. The top of the sinus not extending any higher than the external canthus of the orbit. The inferior turbinate very atrophic. The optic canal was 4 m.m. in diameter.

I do not agree with Sluder or White in their contention that pressure alone from hyper plasia of the sinus mucosa is sufficient to produce these changes in the optic nerve, especially if the bone is not affected. Basing my opinion upon anatomic studies and observation, I do not beileve that pressure alone, even in the presence of an active suppuration, is sufficient to produce a papillitis or choked disc. While the bony wall of the optic canal in many specimens, was very thin, yet in these specimens where the bony wall was very thin, I never observed one instance where there was any evidence of a thickened mucosa covering the bone. It was always thin, had a normal appearance and peeled very readily from the bone. In the specimens where the mucosa was thickened and fibrous in places, the bony wall of the optic canal was also thicker and quite resistant to pressure. While the bony wall of the optic canal remains intact, I do not believe pressure from the hyper plastic mucosa has any effect what-so-ever in the production of the optic nerve involvement. It is therefore necessary for the infection, or inflammation, or whatever it may be, to affect the nerve directly. And this, in my opinion, is either through the blood and lymph supply, or by direct extension of the inflammation or infection through the bony wall of the optic canal. This affects first, the sheath of the optic nerve; and thence, by contiguity of tissue, extends to the central vein of vossius.

The conformation of the optic canal or the optic foramen could also be a predisposing factor in optic nerve involvement. In some of my specimens where there was a variation in the size of either canal or optic foramen, the slightest degree of edema or pressure within the optic canal, could cause

a degeneration of the nerve fibre with subsequent optic atrophy.

From these facts, we can now readily understand how the characteristic signs of



No. 30

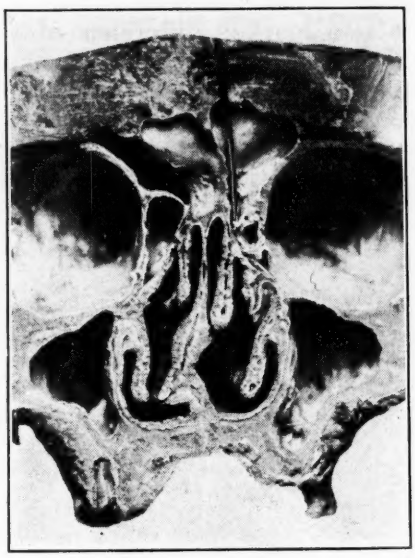
The measurements of the sph. sinus is 20x22x24 m.m. The sinus extends backward and downward behind a ledge of bone which is the bony partition between right and left sph. sinus. The mucosa lining the sinus was very adherent to the bony wall at the lower part of the sinus. The bone shows microscopic changes of a chronic inflammatory nature. The optic nerve was in very intimate relation to the sinus as it passed diagonally along the lateral and post. wall of the sinus for a distance of 8 m.m. The bony wall of the optic canal did not show any inflammatory changes and the mucosa peeled readily from the bone. The bone separating the optic nerve from the sinus was 1/10 m.m. thick. The carotid sulcus is also in intimate relation as it courses along the lateral and posterior wall for 7.5 m.m. The second division of trigeminal nerve also passed along the external wall of the sinus for about 14 m.m. The bone separating this division of the fifth nerve from the mucosa of the sphenoid sinus was about 1/5 m.m. thick. Upon inspecting the sphenoid cavity, this nerve can be readily seen through the bony wall of the sphenoid sinus. The sphenoid opening was about 6 m.m. from the roof of the sinus. The most posterior ethmoid cells opened. It measured 15x12x12 m.m. One large posterior cell not opened. The anterior end of the middle turbinate removed. Picture shows the anterior group as it opened into the bulla ethmoidalis very prominent, also the uncinate process and the hiatus semilunaris are beautifully demonstrated, showing the hiatus semilunaris ending in a large anterior ethmoid cell. The frontal sinus is very small, being 12x7x17 m.m. The opening of the frontal sinus is situated 10 m.m. above the hiatus semilunaris. This position of opening of the frontal sinus accounts for the great difficulty in probing the frontal sinus. The bony wall between the orbit and the ethmoid cells and part of the frontal sinus had been absorbed, or else it was congenitally absent. The mucosa did not present any particular appearance to indicate a previous suppurative sinusitis. This is probably one of the freaks of nature.

a sinus affection, enlargement of blind spot, and central scotoma are produced. The infection, edema or whatever may be the exciting ccause, first affects the periphery of the optic nerve, giving rise to an interstitial optic neuritis. Here the peripapillar bundles become involved and cause an enlargement of the blind spot. The process can now extend by contiguity of tissue to the central vein of vossius, exciting an axial neuritis, and thus involving the papillo-macular bundles, which causes the central scotoma.

Even a paradoxical behavior of the infection may be the result. Fuchs reported a case which showed only a small scotoma for red. Here the central fibers of the optic nerve must have been involved, affecting the papillo-macular bundles.

PROGNOSIS AND TREATMENT

The prognosis or retrobulbar or intraocular neuritis, due to a sinus affection, depend upon the course of the infection and proper treatment. In acute cases, the prognosis is better than in the chronic and slowly developing cases. In the former, the symptoms may occur with amazing rapidity, and your patient may be blind in a few hours. Early and proper surgical intervention in these cases gives excellent results unless some intra-cranial complication develops. Many spectacular results of this type of sinus infection have been reported. In the chronic non-suppurative ethmo-sphenoiditis, the prognosis must be a guarded one, be-



No. 33

The saggital section through the frontal sinus, orbita, antrum, etc. This is a very interesting specimen because it shows the pathological changes that can be seen from a chronic non-suppurative ethmoiditis. The right frontal sinus was 30x20x18 m.m. The opening from the frontal sinus into the nose has been closed due to some chronic infection with bone formation in this region. Below the frontal sinus and above the orbit can be seen a large orbita-anterior ethmoid cell, which measures 28x7x25 m.m. There isa nother large anterior cell which is about 20x8x5 m.m. placed between the orbit and the ossified part of the frontal sinus. The right middle turbinate shows polypoid changes, especially the anterior end. This polypoid mucosa and tissue covering the middle turbinate, extended also into the ethmoid cells. The left frontal sinus shown with probe leading through the fronto-nasal duct into the nose. Sinus is irregular in shape and has the following dimensions, 24x17x8 m.m. The fronto-nasal duct leads directly into the hiatus semilunaris. On the left side, the ethmoid cells are filled with thick polypoid mucosa. The lamina papyracea was 1/10 m.m. thin on both sides. The septum had a very great spur along the vorner jutting out to the right side, with a very large corresponding concavity on the opposite side. In comparing the right and left maxillary sinuses we see that the right maxillary sinus is smaller than the left, being 25x18x35 m.m., while the left is 30x22x32 m.m. Both maxillary sinuses lined with a thick polypoid mucosa. The left maxillary sinus extended 5 m.m. deeper into the maxillary bone and a tooth can be seen jutting into the sinus.

cause it is quite impossible to determine in advance, what the final result will be. In many of these cases, irreparable changes, no doubt, have already occurred, both in the optic nerve and the bony wall of the sinuses, before such cases are seen or recognized. Unfortunately, in such cases, your probable result will be only a partial recovery, if any results, whatever, are obtained. In the chronic sinus infections, where no permanent injury to the optic nerve has been done, the nerve will recover, if the focus of infection is removed.

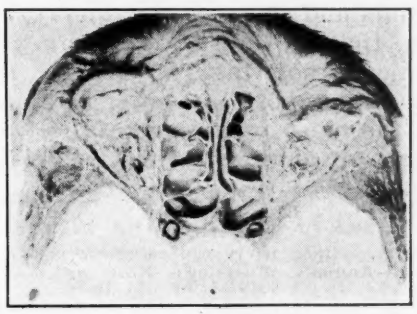
Then, there are unfortunate individuals whose optic canals or optic foramen are smaller than normal, say 3½ or 4 m.m. or less. In these cases, a severe retrobulbar or intra ocular neuritis from a sinus affectation would probably result in a subsequent optic atrophy and blindness. I have never seen or heard of such a case, but my observation of the optic foramen and canal would lead me to suspect such a prognosis.

TREATMENT

It seems to be the consensus of opinion, that the most logical treatment in these cases is surgical; that is, in the cases where there is positive evidence of some sinus affection,w hether this be determined by intra nasal examinations or X-ray findings. The sinus or sinuses which are involved should be opened and drainage well established. In the acute sinus infections, reports are universally good, if your surgical intervention is quickly and accurately performed. I have no statistics to give in reference to absolute and permanent cures in the chronic non-superlative or hyperplastic ethmosphenoiditis, but Vail, Sluder and particularly White have reported cures with the complete restoration of the function of the optic nerve in some such cases. But I believe that in the majority of cases of this form of sinusitis, irreparable changes have already taken place, either in the optic nerve or bony wall of the sinus; and that we can not expect a complete recovery. You may consider yourself very fortunate if a partial function of the optic nerve is restored, after removing the middle turbinate and opening the ethmoids and the sphenoidal sinus. In a given case, where it is possible to determine the shape and size of the optic foramen by X-ray interpretation, much valuable information may be obtained, regarding the optic foramen and the superior orbital fissure. Here, very accurate and essential anatomical relations may offer some aid in our surgical procedures, and insure better and more permanent results. However, there remains much to be done along this particular line of thought, before we can arrive at any definite conclusions.

The treatment of these cases, as described, should be surgical.

What are we to do with those obscure optic nerve conditions where it is impossible to determine the presence of a sinus affec-



No. 70

The saggital section through the orbits, ethmoid cells and the sphenoid sinus. This picture gives a very definite illustration of the width of the ethmoid labyrinth. The right eth. lab. measured 26x8x25. The left ethmoid labyrinth is approximately the same dimensions as the right. Right sph. sinus measured 15x10x22 m.m. The mucosa lining the cell was very thin and easily from the bone. The optic nerve passes along the lateral and superior wall of the sinus for a distance of 8 m.m. The bone separating the nerve from the sinus is about 1/5 m.m. thick. The left sphenoid sinus measured 15x12x20 m.m. The mucosa peels very easily. No visible bone changes. The optic nerve is more prominent in this sinus than in the right one. 10 m.m. of optic nerve is in sinus. The bone separating nerve from this sinus is about 1/10 m.m. in thickness. The internal carotid arteries are in very close relation to both sinuses.

tion? The patient must be thoroughly examined by a competent internist and neurologist to exclude any form of internal or nervous diseases, which might have produced optic nerve involvement. Even though the patient may have lues, tuberculosis, multiple sclerosis or tabes, he may also have a chronic sinus disease. We had two such cases in the Royal Hungarian Eye Hospital in Budapest, in 1922, in which the patients had an optic neuritis. They gave a history of a previous exposure and small chancre; blood Wassermann xxxx, in both cases. Anti-luetic treatment did not have any affect upon their eye conditions, and they were progressively getting worse. Professor Grosz then referred both of these patients to a rhinologist and requested an exploratory operation on the nasal accessory sinuses. The posterior ethmoids were exenterated and the sphenoid opened. Both of these cases began to improve very soon after the operation; and within two or three weeks their eye symptoms had all disappeared. Therefore, in any case of optic neuritis, especially unilateral affection, one must always think of an accessory sinus disease, as being an important etiological factor in the production of an optic nerve involvement, regardless of the negative nasal

findings. Furthermore, I believe that every case of retrobular or intra ocular neuritis which does not soon improve under the proper medical or local treatment, should be submitted to surgical treatment without further delay.

From a detailed study of the literature on this subject, and from my anatomical observations and research, I will say, in conclusion, that we must have more accurate anatomical knowledge, and more definite pathological reports, in order that we may obtain the most gratifying results from our operative procedures.

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OSTEOMYELITIS

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Osteomyelitis is an infective disease resulting from hematogenous infections in cases of traumatism or from peritostitis. It may involve the soft tissues and cells of the Haversian canals or the medullary cavity. Various micro-organisms, including staphylococci, strephtococci, typhoid bacilli and colon bacilli, have been discovered.

Chronic osteomyelitis is indefinite as regards its duration, and is interrupted at intervals by acute exacerbations of the infective process. During the periods of inactivity, a slow series of pathological changes are taking place. There is an increase in new bone formation. The lesion becomes less tender, the redness and oedema disappear and the articulating surfaces become less painful and stiff. The sinuses contract and their openings become smaller, often becoming lined down to the bone by an ingrowth of epithelial cells or there is an inversion of skin. The discharge becomes less purulent and profuse until it reaches the stage of serious fluid. During this period the patient makes rapid strides in his general health, his temperature is normal, his appetite good and it appears that a complete recovery has taken place. Suddenly there is a rapid rise of temperature, the effected part becomes swollen, reddened and extremely painful. So long as no radical surgical treatment is instituted, so long will the patient suffer these severe exacerbations of the process.

Septic infection, after acute symptoms have subsided, is a powerful stimulant to osteogenesis.

If a wound exists as in a compound fracture, the diagnosis is evident. The constitutional symptoms of septic absorption are present. The pain is intense. The discharge purulent and offensive, often containing bone particles and tissue sloughs. The periosteum is thick, red, and separates easily. In cases without wound infection, the onset is sudden and violent and death may result from systemic poisoning. The disease is generally ushered in by a chill followed by a high temperature. There is an intense aching pain in the bone and joint tenderness. Within a few days, there is pus in the medullary cavity and a rapid destruction of bone begins unless the tension is relieved by operation. The soft tissue overlying the bone becomes swollen, glossy and red. This disease is often mistaken for rheumatism because the joint is painful and swollen.

The invading organisms come from the blood stream and the condition may be considered a complication of typhoid, tonsillitis, influenza, empyema or other diseases.

TREATMENT

Acute osteomyelitis, without wound infection, is serious and rapidly progressive. Murphy insisted on operation immediately after the initial chill. The infection is under tension and destroys tissue at a rapid pace. The treatment consists in opening the medullary cavity by means of chisel or drill, and making a gutter through the cortex for the entire length of the infected area. During the acute stage, drainage is necessary, but it is not advisable to curet.

The majority of cases, however, are those following trauma and result in a chronic osteomyelitis. When the wound is draining satisfactorily and there are no signs of extension or exacerbation of inflammation and the general condition of the patient is good and there is progressive union of fractured bones, it is better to wait allowing as much union to take place as possible. If, however, the drainage is not adequate and there is a rise of temperature and the patient's general condition is poor, then immediate operation is imperative. The elimination of all dead and diseased bone is the first step in the treatment. Failure in the treatment of chronic osteomyelitis is usually due to the fact that mere cureting is done through a small opening instead of wide excision of the diseased soft tissue as well as the sequester and unhealthy callus. The general principles of drainage apply here as well as in the evacuation of abscess cavities elsewhere. It is the elimination of the cavity by the entrance of periosteum and the adjacent soft tissues that results in a permanent cure. This is accomplished by the subperiosteal removal of one wall and then bringing about an adhesion of the remaining wall where there is an extensive destruction of overlying soft tissue, a plastic operation is necessary. All bleeding must be stopped. This precaution is essential for it may result in extensive post operative necrosis. Sutures should not be inserted nor is it advisable to pack the wound. Several Carrel tubes are inserted in the recesses and the wound irrigated with saline or Dakin's solution. Complete closure of the would should be discouraged for several days until all evidence of infection and further necrosis has passed. The wound may now close by granulation or a secondary operation may be done.

In operation on aseptic cases, it is well to outline the size, shape and position of the

sequestrum. This is best done by use of radiograms. The incision is then planned to effect a soft tissue flap which is replaced after the necrotic bone and sequestrum have been removed. This method is only possible in selected cases.

Aluminum-Potassium Nitrate treatment has recently been discovered by Thorek. It is not a substitute for rational surgery, but a pre-operative treatment in badly infected cases, or procedure in cases that have failed to respond to operative interference or those who refuse operation, or a post-operative treatment in infected cases. "It is not an antiseptic, but an accelerator of bacterial growth tending by rapid propagation to lower the vitality of the infecting organisms, thereby, assisting the body to eliminate the invading organisms." Pain in most cases is relieved. It does not attack normal tissue or interfere with granulation.

CASE REPORTS

Case No. 1—Patient was suffering with intense pain in the right thigh, the leg was swollen, and the skin red and glossy, his temperature was 103°. He remembered a fall 27 years ago, at which time his thigh pained him and he was confined to his bed for three weeks. Several years later sudden pains appeared with swelling. At this time, the skin in the upper third of the thigh opened spontaneously and a spicule of bone escaped with some pus. The wound closed and did not trouble him until the last attack in 1921, at which time I made a diagnosis of osteomyelitis of the right femur. The early injury was in all probability a fractuure of the femur. X-ray examination showed a tunnel through the femur. The thigh was incised and a large sub-periosteal abscess opened. The cortex underneath was brittle and necrotic. It was chisled away until the medullary cavity was exposed, the gutter being three inches in length. Pus which was under tension escaped freely. The wound was drained with Carrel tubes and irrigated. Complete recovery. Pathological microscopic report reads as follows: "The tissue contains a large amount of purulent material in the interspaces. The bone is rarefied and macerated. An occasional giant cell is seen. Diagnosis: Severe osteomyelitis with extensive destruction of bone."

Case No. 2—Compound, comminuted, transverse fracture of the lower third of tibia and fibula. The overlying soft tissues were contused and macerated. The leg was greatly swollen and primary treatment was rest and an effort made to sterilize the wound. After some difficulty, this was accomplished. An open reduction was done without mechanical fixation. Three weeks later, the leg became red and swollen and there was a discharging sinus at the point of fracture. Aluminum Nitrate treatment was used in this case with gratifying results. After a long period of treatment, the wound became sterilized, but there was no union. A Lane's plate was applied and removed after several weeks.

Case No. 3—Patient is a male child 4 years old. Two months after an illness, which the mother described as influenza, the boy became lame and he complained of pain in the right ankle joint. His general condition was poor. He had a rise in temperature daily. The swollen, glossy, reddened area was incised. The articulating end of the tibia was enlarged and the periosteum mottled. The bone was soft and spongy. Pathological examination was tuberculous osteomyelitis.

AUTOMOBILE BATTERY BURNS OF THE EYES AND ADNEXA—WITH CASE REPORTS

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Sulphuric acid as an etiological factor in severe burns of the eye and adnexa has long been known. Much has been written concerning its potential dangers when thrown or splashed into the eyes so that most industries using this acid have warned their employes and are taking necessary precautions in preventing accidents. Recently with the advent of the automobile with its self-starter a new source of danger has arisen of which the profession and the public have received little or no warning. For this reason the following cases are reported and sulphuric acid burns of the eyes resulting from the careless examining, repairing and recharging of the wet celled storage batteries are discussed.

Most of the cases were examined and treated at the Akron Eye, Ear, Nose and Throat Hospital, Akron, Ohio. Each case is interesting because it illustrates the etiology, pathology, prognosis, complications, treatment and prevention of mild and severe automobile battery burns of the eyes.

CASE REPORTS

Case 1.—C. B., male, age 30; automobile mechanic. Family and personal history negative. While examining and recharging a wet celled storage battery at his garage March 5, 1922, the present trouble began. Shortly after adding concentrated sulphuric acid to the various cells, he leaned forward to examine them, holding a burning torch near the uncapped cells of the battery. The hydrogen gas which was liberated by the electrolytic reaction between the acid and the zinc and lead plates immersed in the solution, mixed with air, ignited and exploded, throwing the acid into the face and eyes.

When examined at the office one-half hour later, the palpebral and bulbar conjunctivae and cornea of the right eye were covered with a white eschar and appeared as if cooked. The bulbar conjunctivae of the left eye was hyperemic and congested, the cornea was not involved. Due to the marked irritation of the acid causing photophobia, lacrimation and blepharospasm, patient was temporarily blind in both eyes. Fortunately, the mild first degree burn of the left eye responded quickly to treatment and patient could see after a drop of 1 per cent cocaine had been instilled. The left eye appeared in good condition two days after accident.

The third degree burn of the right eye responded slowly to treatment. Visual acuity disappeared, only faint light perception remained. Sodium-bicarbonate, weak silver nitrate and atropine solutions were instilled into the eye several times during each day and the patient used liquid albolene every two hours at home. He was advised at the beginning of treatment

of the possibilities of loss of vision and loss of the eye. The prognosis was guarded.

The following complications developed. The white eschar sloughed and the corneal and conjunctival epithelium of the right eye was washed away as fine white threads. The denuded surfaces caused severe pain and blepharospasm. The lids were swollen and edematous. An eczema involving the external lower lid and face developed as the result of the marked lacrimation and irritating discharges. Ten days after accident a deep ulcer developed at the lower pole of the cornea near limbus associated with an iritis. These conditions gradually disappeared under treatment. The corneal ulcer healed, leaving a leucoma. Later, during the sixth week, a pseudo-pterygium developed in the area of leucoma which rapidly spread toward the center of the cornea and downward, connecting with a symblepharon posterius. The latter condition caused limitation of mobility of eyeball, trichiasis and entropion, while the former interfered with visual acuity. The upper and central parts of the cornea had cleared sufficiently at the end of the fifth week so that patient could read 20/150.

In order to relieve the above complications and to prevent blindness, a pseudo-pterygium and symblepharon operation was performed by D. W. Stevenson, assisted by the writer. The pseudo-pterygium and symblepharon were buried in the fornix and the denuded surfaces covered with epithelium.

This operation was only partially successful as the symblepharon recurred six weeks later. A second operation was performed, gutta percha was inserted, stitched and kept in place between lid and eyeball until cicatrization had taken place. This prevented the denuded surfaces from adhering and proved successful.

The patient was last examined seven months after accident. At this time had normal mobility of eyeball, the cornea had cleared sufficiently so that visual acuity was 20/25. A small leucoma still remained at lower pole of cornea. The corneal astigmatism resulting from the burn was corrected by a compound hyperopic astigmatic lens.

Case 2.—W. H., age 24, rubber worker. Family and personal histories negative. The present trouble commenced at his home while repairing his automobile, April 12, 1922. The motor was running when he uncapped one of the cells of the battery. The accumulated hydrogen gas, mixed with air, was ignited and exploded by a lighted pipe which he was smoking, throwing the sulphuric acid dilution into his face and eyes. The battery was examined by his father the following day. He found the small vents at the top of each cell occluded with detritus, which prevented the escape of hydrogen. The solution, tested by a hydrometer, had a specific gravity 1.275.

The conjunctival sacs were washed out immediately with cold water and ten minutes later at the office, sodium bicarbonate solution was instilled, neutralizing what acid remained. The corneal epithelium was denuded in the right eye. The conjunctival tissues of both eyes were hyperemic and remained so for four weeks. The patient returned to work ten days after accident. Except for the slight hyperemia, both eyes appeared in good condition.

Two weeks later, he returned to the office complaining of headaches and blurred vision in both eyes. Our records showed that the patient had been refracted 10 years previous and fitted with lenses, correcting the compound hyperopic astigmatism of the left eye and the slight hyperopia of the right eye. The patient wore these lenses six years. After graduating from high school he discarded them, doing his work at the factory without eye symptoms, until present trouble began. He was refracted a second time under a cycloplegic and fitted with glasses, correcting the compound hyperopic astigmatism of both eyes. The patient returned to the office one month later for adjusting of his lenses, which he had worn constantly. His eye symptoms had disappeared and his visuual acuity with lenses in either eye was 20/20.

Case 3.—F. S., male, age 23; apprentice automobile mechanic. Present trouble commenced April 14, 1922. He gave a similar history as case No. 1. He had a second degree burn of right eye with denuding of the corneal epithelium, associated with a mild first degree burn of the left eye. Due to the marked photophobia and lacrimation, patient was unable to see for a few hours following accident. An iritis developed in the right eye two days later, which persisted for ten days. Two weeks after accident he returned to his work. When last examined at the office two weeks later eyes appeared in good condition. His visual acuity was 20/20 in each eye.

Case 4—W. M., age 40, male, plumber. September 10, 1922, he was repairing and recharging his automobile wet celled battery at his home. Further history same as Case 1. When examined at the office 20 minutes after accident, both cornea were denuded of epithelium and the bulbar and palpebral conjunctivae were hyperemic. The patient was treated two weeks at the office. His visual acuity was 20/20 each eye when last examined.

Case 5.—F. A., male, age 25; apprentice automobile mechanic. He was examining recently charged wet celled storage batteries at an automobile storage battery company where he was employed, October 6, 1922. He had a lighted torch near an uncapped cell of a battery, a bubble of hydrogen gas exploded, throwing sulphuric acid dilution into his face and eyes. Upon examination at the office one-half hour after accident, the conjunctival tissues of both eyes were hyperemic. The corneas were not involved. The patient returned to his work ten days later. The visual acuity, when last examined, was 20/20 each eye.

Case 6.—J. R., age 20, male; college student, Lansing, Mich. On October 12, 1923, he held a lighted cigarette near an uncapped, recently charged, wet celled storage battery, which ignited and exploded the hydrogen gas mixed with air within the cells, throwing sulphuric acid dilution into both eyes. Fortunately, the burns were mild in type and the eyes appeared in good condition one week later.

The high explosive conbustibility of free hydrogen mixed with air in the presence of a burning torch, match, cigar, pipe or cigaret, or any other flame, as illustrated by the above case reports, is the important etiological factor in automobile battery burns and should be emphasized. Each wet celled battery used in connection with the self-starter in the greater majority of automobiles consist of zinc or lead plates or a combination of them immersed in an acid dilution. As a rule sulphuric acid diluted with distilled water is used. The electrolytic reaction between the plates and acid dilution liberates free hydrogen which in the form of a gas escapes through the small vents at the top of the battery. The chemical reaction is accellerated directly when the acid concentration is increased or when new plates are added and indirectly when the motor is running. The greater the chemical reaction, the greater quantity of

hydrogen is liberated. Thus, the greatest danger arises in examining a recently charged battery in the presence of a flame. Nevertheless, every automobile battery is potentially dangerous since the small vents at the top of the battery may become closed with detritus, allowing the gas to collect in the top of the cell. If the cells are uncapped in the presence of a flame either during or after the motor is in action, the accumulated gas mixed with air explodes, throwing the acid into the individual's face and eyes.

The nature of the burn at this time depends upon the concentration of acid dilution and the length of time the acid is in contact with the tissues of the eye. Weak sulphuric acid dilution produces as a rule hyperemia of the conjunctivae without loss of tissues, while stronger solutions if allowed to remain in contact with the tissues of the eye denude the corneal and conjunctival epithelium. Concentrated sulphuric acid produces deep subconjunctival necrosis, resulting in complications which vary according to the parts of the eye involved and the results of cicatrization.

Case one well illustrates the complications which may develop after concentrated sulphuric acid is splashed into the eye while case two shows a comparatively mild degree acid burn giving rise to corneal astigmatism in the right eye and stirring up a latent visual defect in the left eye.

It is evident that the prognosis in all acid burns of the eyes should be guarded, advising the patient at the beginning of treatment of the severity of acid burns, the complications that may develop and the indefinite length of time for treatment.

Moreover, a careful history and determination of the visual acuity, followed as soon as possible by an opthalmoscopic examination of the deeper structures of both eyes is important not only in determining the prognosis but also from industrial and medico-legal standpoints. The history and findings often determines and rules out some pathological condition or some visual defect which the patient has had some time previous to injury upon which he bases a claim for compensation.

As the degree of burn, too, depends upon the length of time the acid dilution is in contact with the tissues, early treatment is advised. The cul-de-sacs of both eyes should be washed immediately with cold water and the excess of acid neutralized with instillations of sodium-bicarbonate solution. Further treatment depends upon the degree of burn and the complication which may develop. Early operative procedure is not indicated unless the eyeball is partially or totally destroyed or sympathetic ophthalmia threatens. A bland oil dropped into the cul-de-sacs of one or both eyes every two hours at home relieves pain, aids in preventing denuded conjunctival surfaces from adhering and lessens the tendency toward symblepharon.

In conclusion attention is called to the prevalence of automobile battery burns of the eyes and methods devised whereby these burns can be prevented. Gradle recommends the remodeling of many of the wet celled batteries now used so that the dead space at the top of each cell of the battery is eliminated. This is important, but does not take care of the trouble entirely, as any wet celled battery will have a dead space at the top providing the acid dilution is down below the level of the plates. As all wet celled batteries are potentially dangerous, the following precautions in examining, repairing or recharging them should be taken.

(1) Keep all flames, including burning torches, matches, pipes, cigars or cigarets, away from the battery.

(2) Stop the motor, uncap each cell of the battery and allow accumulated hydrogen to escape, examine by illumination of a fllash light, electric or sunlight.

(3) Keep the cells of the battery filled with distilled water.

(4) Keep small vents at top of each cell open and clean.

REFERENCE

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CARCINOMA OF THE LARGE INTESTINE

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Ninety-eight of malignant tumors of the intestinal tract involve the large bowel. Over a large series of cases, the percentage of carcinoma is about three to one, male and female, and about three times as common in the descending colon and rectum as in the rest of the colon.

While rectal carcinomata are mostly prevalent between the ages of 40 and 55 years, they are also found very frequently in the young. Many cases have been reported under 20 years of age. Lonant collected sixty-one cases of carcinoma of the large intestine between the ages of 20 and 30 years[1].

About 60 per cent of the tumors of the large bowel involve the rectum, and over

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5 per cent of all cancers are of the intestinal origin.

ETIOLOGY

While the irritation of hemorrhoids, fistula, fissures and ulcer, may predispose to cancer on account of the irritation, it is questionable whether cancer is due directly to hemorrhoids. In our list of cases for the last fifteen years, we do not recall one case, where the history shows that the evidence was that the cancer began at the site of the hemorrhoids. Many operations have been performed for hemorrhoids when the patient had a well developed carcinoma, and we would not infer that there is any connection between the two, even when the carcinoma is of relatively slow growth. symptoms may be present two or three years before marked involvement, excepting in the mucous membrane of the bowel. From the experience of many observers, the incident of age is later in rectal carcinoma than in the colon. On account of rather frequent occurrence of carcinoma at the flexures, as the caecum, transverse, splenic flexure and sigmoid, it is possible that there may be histological changes which predispose to this disease.

TYPES

The carcinoma of the colon is usually of three types, with perhaps a number of variations. The most frequent type is the adenoma carcinoma which may be either medullary or stenosing fibro-carcinoma, and the occasional colloid carcinoma which usually involves the caecum and the squamous celled carcinoma or epitholeoma, involving the cutaneous border of the anus. The part of the bowel involved in order of frequency is the rectum, sigmoid, caecum and ascending colon, with the hepatic, splenic and descending portion about evenly divided. The malignant growths involving the left half of the colon and rectum, are more dangerous, both from the operative standpoint and metastases. This is due to three reasons. The more frequent and earlier involvement of the left side lymphatics with mestastases. Second, they are more difficult to remove from a surgical viewpoint on account of the restoration of the continuity of the intestinal tube, and third, the greater danger of infection following operation on the part of the intestinal tube having thick foecal masses. The squamous celled types, involving the lower two or three inches of the rectum are often very malignant and metastasis of the liver often takes place earlier, as well as matastasis in the inguinal lymphatics. There is much less bleeding from the stenosing fibro-carcinoma. Often stenosis takes place relatively early, and at times an operation can be satisfactorily performed even after complete obstruction, without there being involvement of only the adjacent lymphatics. This is especially true of carcinoma of the ascending and transverse colon. The medullary and papillary types are usually associated with more bleeding and more ulceration, and are much more dangerous than the annular growths.

A colloid carcinoma is relatively not nearly as malignant as the other types and is usually found in the region of the caecum and often causes marked obstruction and grave secondary anemia with the appearance of a large tumor mass, without early lymphatic involvement.

SYMPTOMS

The symptoms depend upon the type, position and extent of the growth, and in patients presenting themselves for examination the early symptoms of carcinoma of the bowel should be suspected and a thorough examination instituted, should the following symptoms be noted by the patient. Among the earliest symptoms of the usual carcinoma is irregularity of the bowel, either diarrhea or constipation. Constipation much more frequently than diarrhea, gas distress and a feeling of fullness in the bowell. Changes in the stool, from their normal characted, with pain or tenesmus. With growths involving the lower rectum, patients pass blood at times in about 50 per cent of the cases, even early in the disease. With the progress of the disease, added to the above, will be slight loss of weight, although this is a symptom which can never be relied upon, and can never be depended upon from the patient's standpoint, as many of them do not know whether they have lost weight or not before coming in for examination. To wait for this symptom of loss of weight in suspected carcinoma is to wait oftentimes until the patient is a hopeless case. Blood changes occur rather early in carcinoma of the large bowel, the blood should always be examined as a routine in examination of these patients, as well as stool examination for occult blood. Slight loss in hemoglobin with decrease of red blood cells are significant.

In some types, as in the stenosing fibro-carcinoma, the only symptoms may be gas distress and constipation. These symptoms are often continuous, but sometimes intermittent. These increase with the extension of the involvement and stenosis, a slight or total obstruction may occur, without any other clinical subjective symptom.

Pain as a symptom in carcinoma is often entirely absent with the exception as noted

above in growths involving the rectum, and as in carcinoma elsewhere, often denotes not so much malignancy as the extent of the malignancy and involvement of the other organs. In the papillary and medullary types, ulceration and bleeding are early symptoms; following the ulceration, infection occurs, which is usually the cause of the pain. Ulceration may occur at irreguular intervals, and great care must be made in examination of these patients as the symptoms may be practically absent during the quiescent period. In some cases when patients first present themselves, they may not have marked symptoms, excepting distress with gas, or a mild or grave secondary anemia. This anemia may be so marked, and while in other diseases might put them in the inoperable class, it is surprising to what degree of anemia patients may suffer and still successfully have a radical operation for the removal of cancer. Other symptoms are often total aversion to certain types of food.

EXAMINATION

A carefully taken and written clinical history will make the diagnosis in the majority of cases. In addition to the complete general examination, in which it is important that the patient should be examined several times and in suspected cases, examination had much better be made in the hospital, where patients may have the proper enemas as preparation and relief from distension. We include, beside the careful physical examination and blood examination, the rectal digital examination, which in 50 per cent or more of the cases of involvement of the rectum makes the diagnosis, without anything further. Careful examination of the stool for tissue and blood should always be made, especially after enemas.

In addition to the digital examination a carefully made protoscopic examination should be made, which is best made with the patient in the knee chest position, with the proper sized protoscope and a good light.

In addition to the above, the X-ray examination should never be omitted, for this type of examination we prefer to advise the barium enema, and it is best for the surgeon to accompany the patient to the X-ray Department and should examine with an expert Roentgenologist the fleuroscopic examination. It is extremely important for the physician to note this, as small lesions may be noted by this carefully made X-ray examination with the barium enema. Serial plates should be made as well as the fleuroscopic examination, and even after negative reports are made after the above procedures, they should all be repeated in every detail in two or three weeks after negative reports.

The mortality in this disease will be lessened when patients consult the examining physician early, and the painstaking care with examination is made.

DIFFERENTIAL DIAGNOSIS

There are not many conditions which are usually confused with carcinoma of the large bowel. Probably the first of these is diverticula of the sigmoid or descending colon. The history of pain in these cases, associated with inflammatory masses found by examination and shown to be outside of the lumen of the bowel by X-ray examination with the finding of diverticulae, with barium enema, is one way that this differential can be made. We must remember that carcinomas do develop on the site of diverticulae and many cases have been reported. Great care should be taken to make this differential diagnosis, by every possible means.

TUBERCULOSIS

Tuberculosis of the colon is not nearly as frequent as carcinoma, and is very infrequent after the age of 30 years, while carcinoma is very common. The diagnosis in tuberculosis of the colon, above the point where we would be able to obtain a specimen for examination is sometimes impossible to make. After all means of elimination have been made, it is always safest to consider the case one of carcinoma and treat accordingly until the court of the last resort, the pathological slide, informs us of the happy report, from the patient's standpoint that the tissue is tubercular and not carcinomatous.

SYPHILIS

Syphilis is very rare in the large bowel, with the exception of the lower three of four inches. We have the blood examination and tissue for examination with history of the disease in some cases. We must not forget however, that patients with positive blood Wassermanns and history of lues can have and often do have carcinoma of the colon and the fact that they have a history of lues should not allow them to die of carcinoma without other precautions being taken for an absolute diagnosis. Certainly, it is not proper to treat patients for lues more than two or three weeks in questionable lues and carcinoma without improvement. We are doubtful of there being any harm from taking a small specimen for microscopical examination, wherever such can be obtained through the protoscope.

TREATMENT

When treatment for carcinoma of the bowel is early, there can usually be radical removal by surgical means. The X-ray or Radium or any other form of treatment is not satisfactory in cases that are operable, unless used with the hope of destroying metastasis. We believe that time should not be lost before operation, after diagnosis is made, excepting to put the patient in as good condition as possible. This we do by blood transfusion if necessary, enemas and getting the bowel as clean as possible, and usually a preliminary colostomy. The length of time after colostomy, before radical operation is made would depend, of course, upon the condition of the patient and upon the position of the growth. A longer time would be necessary after colostomy before operations should be performed in carcinoma of the left colon than of the right or mid-colon. A week or ten days would usually be sufficient for either type. In carcinoma involving the hepatic and splenic flexures an dthe mid-colon, instead of performing preliminary colostomy, we believe that anastomosis between the ascending colon and descending colon would serve the same purpose and lessen the period of convalescence for the patient. The length of time after such anastamosis is made before advising the resection would depend upon the patient's condition entirely. Usually two or three weeks would be sufficient. We have been surprised what little shock and low mortality one has after advising these two stage operations, and in some cases even three stage operations. The type of operation would depend, of course, upon the location of the growth and its extent. It may be impossible to tell before the operation whether one can restore the continuity of the resected bowel, or whether it would be necessary to leave a permanent colostomy.

From the experiences of many surgeons it seems that if a permanent colostomy is to be made, it is better to make it in the inguinal region than in the perineal or the sacral region. If there is any suggestion about radical removal of the growth it would seem better to have the patient fully understand before the operation the fact that they may have to have a permanent colostomy. In some cases with a good deal of secondary inflammation, that are apparently inoperable, they will be greatly improved by deep X-ray treatment and preliminary colostomy. Many such patients will be able to have a radical operation only after these measures have been used. Whatever type of operation is used for resection, whenever possible end to end anastomosis should be used.

In carcinoma that can be removed through the rectum or by the combined recto-vaginal route, it had better be performed in this way. It is safest in most of the cases in the lower rectum, especially the squamous celled type to make preliminary abdominal incision for exploration of the liver, as the liver is often involved in the early squamous celled carcinomas. This examination should be made at the time of the first stage, pre-operative colostomy.

With growths which involve only the mucous membrane, it is quite surprising, with proper technique, the amount of rectum which can be brought down through the perineal region, and the spincter be restored so that the patient is very comfortable afterwards.

Probably the most difficult types of operation are the cases that are a little too high and extensive for removal by the perineal route, or too deeply situated to be easier removed by the abdominal route. This is the type of case, that it would probably be safest to get well below the growth and make a permanent colostomy if necessary, rather than to attempt to bring together the bowel under great tension. The rubber tube operation, where the approximal segment of the bowel is brought through and a rubber tube is brought out through the rectum and the lower part of the distal extremity joined to the proximal over the rubber tube, is quite satisfactory in a certain number of cases.

Probably the most satisfactory operation for growths involving the sigmoid would be the Tuttle type of operation, where the entire carcinomatous growth is brought outside the wound, after the distal and proximal arms are united with cat-gut, and after a few days the entire carcinomatous mass is removed with cautery the two ends of the bowel which stick up like a double barrel gun are pushed back after cutting through with the forcep which is applied to the joint loops after about 48 hours, at which time it usually cuts through. After two or three weeks after this procedure, a slight plastic operation might be performed and the continuity of the bowel re-established. It is a very safe type of operation, especially with extensive growths, that have extended through the wall of the bowel.

COMPLICATIONS

If great care is used, there are very few complications in operating for cancer of the colon, which might not arise in any major operation. At times it will be found necessary to remove a portion of the bladder,

and at times it will be necessary to perform Hysterectomy, both of which operations may be performed safely in extensive radical operations, but it is very important that whatever type of operation is performed that proper mobilization be obtained, as it makes the operation much easier, in fact, with proper mobilization many operations can be successfully and safely performed, which otherwise would be impossible. The incision should be properly placed to make the operation as easy as possible, and we believe, that the colostomy which should be made whenever possible, in the left rectus and that the three or four inches of the proximal colon be left as a loop, and this will give the patient a fairly good control of the bowel, in cases where it is necessary to make a permanent colostomy. The patient can be taught in many cases to take an enema through the colostomy wound in the morning and sometimes at night, and be entirely free from any foecal discharge through the day.

The danger of peritonitis, which has been a formidable one, and which was the complication we dreaded most in these operations on the large bowel, is practically eliminated by the use of two or three stage operation. Patients should be brought in as good condition as possible for operation. In addition to the proper colostomy, blood transfusions in some cases, and the building up by rest and by forced fluids, as much as possible. Many of these patients will need proper oral prophalactic treatment, and oftentimes extraction of carius teeth, all of which should be looked after to put the patient in as good condition as possible in a few weeks after his operation. Convalescence is often interrupted in patients with cancer of this type by their being unable to chew their food properly.

MORTALITY

The mortality in our own cases and in many clinics is from 10 to 15 per cent. This is not a high mortality, considering the condition of the patients, and will be reduced by earlier diagnosis, and the earlier presentation of patients for operation. If there seems to be even a small chance of the patient withstanding operation successfully, we believe that they should be given this chance, because without such radical operation they will die a miserable cancer death. There is no known treatment for cancer of the large bowel excepting radical operation and removal of the cancer aided in some cases by pre-operative and post operative X-ray and radium. Neither of these agencies should be used to the exclusion of surgery unless the case is inoperable.

As has been stated above, we have been surprised that after proper colostomy, and suitable X-ray treatments cases that were apparently inoperable become operable. It is very important in such a formidable operation as resection of the colon for cancer, that the surgical team work be at its best. This will include, beside careful pre-operative treatment, a carefully chosen anesthetic, which usually should not be ether, but should be ethelyne gas or nitrous oxide and oxygen, combined with local anesthesia. Great care should be used that there may be no unnecessary loss of blood during the operation, and the highest grade of surgical technique is necessary for the best results. The greatest care must also be used to protect the edges of the wound against unnecessary contamination. Several layers of saline packs should be used to prevent such contamination, and the segment of the bowel should always be removed with cautery. When a patient's condition is dangerous, after a very radical operation, it would be much better to discontinue the operation after removal of the growth, and do whatever anastamosis is necessary at a later operation. It is very beneficial to the patient to give them warm saline solution, either intravenously or subcutaneously, while they are on the operating table. After the operation they should have this continued and two or three hundred cc's every two or three hours, for twenty-four hours or until their condition is satisfactory. The lack of such careful postoperative treatment is oftentimes a deciding factor against the patient's recovery.

We believe that fairly full doses of morphine are a great adjunct to the operation of this type, given both pre-operatively and post-operatively. One of the greatest factors in reducing the mortality in this operation is the two or three stage operation, especially after ethelyne gas or nitrous oxide and oxygen have been used as anesthesia, will be that the patient can be given fluids or even light soft diet within twenty-four hours after the operation, and can have the nourishment which he so much needs, while it would be impossible or inadvisable to give him forced feeding after a one stage operation. Another factor which we cannot lay too much stress upon is that in the two- or three stage operation the danger of infection is practically eliminated.

SUMMARY

Early diagnosis, and early radical treatment will prevent the high mortality incident upon cancer of the large bowel, and multiple stage operation will reduce the

mortality from 15 to 30 per cent to from 5 to 10 per cent.

Proper pre-operative treatment which may include an X-ray treatment may change an inoperable case to an operable one, and though radical operation should always be performed even if permanent artificial anus is necessary. An attempt should not be made to restore the continuity of the bowel unless it can be done without too much tension. No abdominal operation should be performed for cancer of the large bowel without a careful examination of the liver and adjoining lymphatics, which may determine its operability. Many cases of apparently inoperable cancer may be operated upon safely by proper blood transfusions and preliminary colostomy. Sufficient time should elapse after the first stage operation, before the second stage is attempted in some cases a month or more may be advisable.

FOUR ILLUSTRATIVE CASES

Mr. C., age 40. Operated 1923. History of one year of symptoms. Large colloid carcinoma, involving 6″ of caecum. Patient had a secondary anemia with 2,000,000 red cells. A preliminary enterostomy was made, using the terminal ileum, and after three weeks the ascending colon was resected and anastamosis of the ileum to the hepatic flexure. Patient made an uneventful recovery, and was well for over two years. He then developed metastasis of the liver, and died about three months after metastasis was noted. Patient was well for over two years.

Mr. L., age 56. Sent in as an emergency operation, with complete bowel obstruction, which had been present for over 36 hours. Colostomy made as emergency, using the colostomy on the right side. Four weeks later a large adenoma carcinoma, which had caused complete obstruction of the lower portion of the sigmoid, was resected by the abdominal route, Tuttle type of operation.

About two months later the colostomy was closed, and a plastic operation performed on the colon with restoration of the lumen. Patient has gained 40 pounds in weight, and is apparently well, after 16 months. History of cancer had existed over eight months before examination, under care of an osteopath.

Mrs. K., age 24. Operated in May, 1922, for a large medullary carcinoma of the sigmoid. Preliminary left side colostomy was performed. One month later we removed a large medullary carcinoma by combined abdominal, vaginal-rectal route. Although this was one of the most malignant tumors we have seen, and the patient 24 years of age, she seemed in perfect health when she was examined in March, 1924, with no evidence of disease.

Mr. E. S., June 21, 1921, age 30. History of colitis, three years' duration. Bloody mucous stools, secondary anemia, resection of sigmoid, and to end anastomosis, tube method, tube removed four days later. Patient was examined about two months ago, and there was no apparent evidence of disease.

In practically all of our series of cases of cancer, extending over 15 years, most of the patients had had symptoms of cancer for from five to eighteen months before operation.

(1) Ewing.

THE TRAUMATIC NEUROSES AND THEIR RELATION TO THE SURGEON

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In presenting this subject before a group of surgeons, it is our desire to bring to your attention a phase of the question which is not ordinarily discussed. It is the prevention of the condition which we feel has not been sufficiently emphasized in the past. Inasmuch as the surgeon is the one to whom the majority of these cases are first entrusted for care, it is he who has the first opportunity in prevention.

Erichsen[1], in 1876, first connected trauma with the development of a neurosis, but in doing so he did not use the word traumatic, this term being introduuced by Oppenheim[2] in 1884. Oppenheim's conception of this disturbance was that we were dealing with an organic nervous disease brought on by concussion either directly affecting the central nervous system or being conveyed to the brain by the sensory nerves. However, he admits that the symptoms are in many points identical with the neuroses and psychoses, especially hysteria, neurasthenia, hypochondria and combinations of these. As late as 1915, he again brought out the idea that after trauma, there is a definite disturbance of the normal functioning of the nerve cell which may occur without hemorrhage, inflammation or degeneration and which could be explained as a molecular displacement or disturbance of associated functioning parts. This recent work was on war neuroses.

Among recent work of Americans on this subject, Osnato's[3] has attracted considerable attention. He divides the functional nervous reactions to injury into two groups, viz: traumatic neurosis and traumatic hysteria.

In brief, he believes that a true case of traumatic neurosis will not show any of the true hysterical stigmata, but that its symptoms are due to fear with immediate injury to the nervous system. It is his opinion that most of the traumatic neurosis cases are in fundamentally normal individuals, the injury being entirely responsible for their symptoms; while with the traumatic hysteria, he was dealing with individuals who were making an instinctive maladjustment and who are inferior both mentally and physically. The important fact remains, that regardless of his efforts at classification, the recoveries were practically 100 per cent after compensation claims had been settled. But one case in 23 of the traumatic neurosis group had not recovered,

while the group of 22 traumatic hysterias had completely recovered. A settlement, then, is the most important factor in the establishment of a cure.

Horn's[4] figures would lead one to the same concluusion and he believes "that the prognosis is better in settled than in unsettled cases. This agrees with the opinion of Wimmer of Denmark, Nageli of Switzerland, and Billstrom of Sweden." Horn reported 86 per cent of cures following settlement as compared with 6 per cent in cases still receiving compensation. Moyer[5], Hoag[6], Bailey[7,8], and Cotton[9] and others are agreed that ideagenous factors are fundamental in the cause of the disease. Mayer believes that in traumatic neurosis we are dealing with a disease which is brought on by an "acute stoppage of cerebral activity following trauma, not necessarily structural in origin, but of such a degree that the individual cannot adjust himself to it and this brings on emotional reactions and their motor responses." He believes "that in case of inability to adjust, a disturbance of the endocrines is begun and thus a vicious circle is established."

Since the passage of the Federal Compensation Law in 1911, the economic phase of this question has increased in importance yearly. According to Mitchell and Cobb[10], "only three states are now without a modern compensation law" and "nearly all states have established either Industrial Accident Boards or Compensation Commissions which handle all doubtful cases without bringing them into court, although the law usually permits court action if the patient so desires." The economic loss cannot be considered wholly as a vast amount of money spent yearly on these individuals in compensation, but the loss in production brought about by their incapacitation is equally important. We have no method of determining what percentage of the total number of accident cases have or develop nervous symptoms and therefore no accurate method of knowing the cost of traumatic neuroses to society. We do know, however, that the majority of traumatic neuroses cases are not brought to the attention of the Compensation Boards as early as they should be. This inattention is usually due to the want of a definite diagnosis and the fear on the part of the insurance companies and employers that the compensation board, which sometimes has no doctors as members, will not understand the cause of the condition. Certain of the larger insurance companies have taken a forward step in regard to prophylactic measures in traumatic neuroses. Their plan is to provide consultation boards, which shall consist of a chief, (usually a surgeon) and associates who represent the various specialties in medicine. The services of this board are placed at the disposal of the attending surgeon, through the aid of the insurance companies, as soon as possible following the injury. Consultations are encouraged early in the patient's illness.

We have been strongly impressed in our observation of these cases, that in their establisment much depended on the first physician called to attend the case. As a preliminary statement to our remarks on the cause of traumatic neuroses, we are of the opinion that the disease is essentially ideagenous, and we agree with others who state that in the majority of instances the disturbance takes place in the constitutionally inferior type of nervous system. If one is painstaking enough to obtain a detailed history and to analyze the patient's situation, he will find that his illness provides for him a temporary avenue of escape from previous unpleasant situations. However, we thoroughly agree with Mitchell and Cobb in their statement that "it is impossible to draw the line between consciously planned malingering and an emotional exaggeration of symptoms."

During the last year, one of us (F. P. C.) has seen 14 cases of traumatic neurosis which were being cared for under the Compensation act. There were 13 males and 1 female and their average age was 47 years. With the exception of two cases none of them had been given a previous neurological examination. The average period that had elapsed since their injury was 18 months. The shortest period since development was one week and the longest 8 years.

It is interesting in this connection, that in the two cases of shortest duration (1 week and 3 weeks) both were induced to go back to work, with the result that their symptoms disappeared entirely. The same result was accomplished in two other cases, one of 10 months standing and the other of 13 months. We thoroughly agree with others who have investigated this phase of the question that perhaps the most important point in preventing the establishment of a traumatic neurosis is to avoid delay in the neurological examination of the case. The patients, as a whole, detect any attitude of indecision on the part of the attending physician, and should he be so unwise as to voice any of his doubts or fears, he only sows the seed of future trouble for everyone concerned.

The fear associated with the occurrence of the accident may be the nucleus around which is built a chain of nervous symptoms.

This was well illustrated in the cases of two structural steel workers whose ages were 28 and 35 years. Both had symptoms of anxiety, such as dizziness, sweating, tremors, pains, palpitation, and increased emotional reaction. Both of these men had fallen from a height of about 35 feet and both had a constant fear of going back to his former occupation, one to such an extent that he admitted being awakened every night by dreaming of falling. Neither of them could earn one-half of their former salary at any other occupation and one of them expressed the wish of a lump settlement in order to establish an independent business. We admit the difficulty of preventing cases of this type, but on the other hand the condition is only aggravated by allowing them to continue without a diagnosis and an attempt at setltement.

In five cases, whose ages were 66, 64, 50, 66, and 58 years, no occupation other than that of laborer was given and in all of these except the case of 50 years of age, the patients complained of some symptoms which could reasonably be referred to arteriosclerotic changes. The symptoms which they associated directly with their accidents, however, were hysterical, and in the case, age 50, although having clear cut stigmata of hysteria, one strongly suspected him of malingering. He was a quarrelsome, irritable type and constantly referred to the possibility of consulting his lawyer when anything occurred to irritate him. His case was finally disposed of by a lump sum settlement. Ordinarily, one does not suspect people whose ages are in the neighborhood of 60 years, of being hysterical, but in this type of trouble, it is well to be constantly aware of its possibility.

One of the five cases mentioned above, had been examined by 13 different doctors and he took considerable pride in the statement that "none of them knew what was wrong with him." However, each one had an opinion which the patient could quote verbatim. Following each of the examinations of the last three doctors, the patient would be in such severe pain that he would be confined to bed for a few days. All of this would occur in spite of the fact that he was previously able to walk around and regardless of the utmost care used by the examining physician.

In one of the three remaining cases, the patient, a foreman of 52, was hit on the head by a small elevator gate. The injury gave him a considerable fright, but did not render him unconscious. Four days later he went to the doctor for the first time and complained of dizziness, weakness, and headache. An organic brain injury was immediately suspected by his physician and he was examined with that in view, but the examination was organically negative. Four months later, he was given a neurological examination and a diagnosis of traumatic neurosis made. This patient is still drawing compensation and is no better symptomatically than when first seen. Previous to the accident he had numerous conflicts with the men in authority where he worked and later on admitted a fear for the success of the outcome of the concern.

To illustrate the point that the accident is sometimes ascribed as the sole cause of the patient's symptoms, when, as a matter of fact, a series of circumstances preceding the accident are quite as responsible, we wish to relate briefly the last two cases. The first, a female, age 37, had fallen down a stairway and sprained her ankle. She states that the first attending physician thought it "the worst sprain he had ever seen." She, at the time of the neurological examination, had been confined to bed for over six months, claiming inability to walk. Her neurological examination revealed many stigmata of hysteria in regard to the complaints. This patient had been divorced from her husband five years previously and at the present time she was aware of the fact that he was engaged to another woman. Although she claimed to have contracted Lues from him during their married life, she admitted that she still cared for him to the extent of being willing to reconcilliate. Since her divorce she had been forced to work away from home in order to support her two children. The neurosis in this case was due to a long series of sexual and domestic difficulties, the accident furnishing for her a temporary refuge from an unpleasant situation as well as an appeal for sympathy from those responsible for her situation. The second case in point was that of a railroad engineer, age 60 years, who two years previously had missed a step in getting off his train and jarred himself considerably. About ten days later, he went to his doctor complaining of pains in the sacral region and down his legs. After a thorough examination, they found "nothing wrong with him organically." One year after the accident the patient accepted a check as complete payment for his injury. The railroad company had written him and conversed with him many times previous to the acceptance of the check and as he stated, "the whole business worried and annoyed him." And now one year after the lump sum settlement has been made, although improved, he is still complaining of neurasthenic

symptoms such as: weakness, pains in his extremities after exertion, tender spots, occipital headaches, hyper-emotionalism, etc. The patient had no stigmata of hysteria. On further inquiry, we find that he has been a type who always repressed his emotions to the limit and took pride in his calm attitude in trying situations. During the previous two years, while driving his engine, he had hit five different automobiles and people had been killed in every accident but one. All this had produced a severe shock and strain on a tired nervous system and even though his run was but four hours long, he would go home at night complaining of occipital headaches. We feel that the accident, which the patient held responsible for his trouble, was but an incidental factor in his neurosis. A neurasthenia may have and usually does have its beginning before the accident which merely serves to ignite a number of smouldering symptoms.

Although this series of cases is too small to furnish definite conclusions as to the etiology of this disease, nevertheless it has given us some ideas which may be of service in its prevention. One of us (R. H. D.) in treating over 14,000 cases of accidental injury, including every type from a contused finger to a compound fracture of the skull, has not had develop and continue to a compensation status, a single case of traumatic neurosis. All of these cases were cared for under the Employer's Liability Act. There are no available records showing the incidence of traumatic neuroses in the total number of accidental injuries, although Dana[11] reports that in 2,500,000 accidents in New York, 15 per cent complained of nervous symptoms. In view of this fact we believe tha the non-occurrence of traumatic neuroses among our cases could scarcely be considered a mere chance.

It is our opinion, as we have stated before, that the traumatic neuroses are essentially ideational. We believe that there is no definite demonstrable pathology in the nervous system, but that the trauma serves as the primary suggestion around which the disease is finally established.

We have at all times kept in mind the fact that this condition develops in individuals who possess a constitutionally inferior nervous system; that the sum total of the patient's past experiences, together with his environmental condition at the time of the accident may enter as factors in the cause of the disease. After the accident numerous factors may occur which aggravate and tend to fix the disease upon the individual.

The surgeon can have no influence on the patient's constitutionally constructed nervous system. He cannot control the past experiences of the patient, nor the environmental condition at time of accident, but those circumstances following the trauma which are the circumstances that fix the disease upon the individual, can be materially controlled. We offer the following suggestions:

1. One should never appear alarmed over the condition of the patient and whatever remarks one makes should be reassuring. The fewer made the better.

2. Do not mention the possibility of protracted disability or complication. This will furnish him further ideas to fix the disease.

3. Always minimize rather than magnify the seriousness or severity of the injury, at the same time give him a careful and complete examination. In this examination don't give him the impression that you fear he had a skull fracture or some serious injury, but impress him with the fact that the steps of your examination are routine.

4. If there is doubt as to the diagnosis on the part of either the examining surgeon or patient, competent counsel should be called immediately, for any doubt on the part of physicians is multiplied many times in the mind of the patient.

5. In prognosing a case the family and the patient should be given the same information, otherwise ideas of uncertainty and fear will enter the case. These ideas are the seeds of a future neurosis.

6. It is difficult to prevent suggestions by sympathetic friends and unscrupulous lawyers, factors which often play no mean part in the development of the condition and which, when it is developed, aggravate it. To prevent this, extreme measures are sometimes necessary, such as confinement in hospital and the exclusion of all visitors.

7. Probably the most important factor is to get the patient back at work immediately his injury will permit. There is probably no factor so important as occupying the patient's mind with wholesome things and thereby crowding out memories of his accident and other unpleasant matters, and reestablishing him upon an earning basis. It is well in a patient of this type to prevent his entering upon an indefinite compensation program, for the weekly payment of a sum of money will constantly keep unhealthy thoughts before the patient's mind.

The neuroses will occur, but if they are recognized early and dealt with early, they will be much more easily handled than after they have become fixed upon the patient. The above statement applies as well to the

traumatic neuroses following surgery in which no compensation is involved. We have purposely avoided discussion of that field in this paper.

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GIARDIA INTESTINALIS

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The finding of many cases of Giardia intestinalis during and since the Great War has led to a great deal of study of this flagellate in attempting to determine whether it is pathogenic to man, and if possible to find some specific treatment.

This protozoan was described by Lambl in 1859 and was called Lamblia intestinalis by him and is still by many physicians given this name, though Grassi contributed most of our early knowledge to this organism. In recent years, especially in America, it has been more frequently called Giardia intestinalis.

The flora of the intestinal tract varies considerably in numbers and also in variety, and the many reports of the non-pathogenic bacteria and the study of these in attempting to change the flora from a large percentage of putrefactive to that in which the fermentative bacteria will predominate, has led to much more thorough study of fecal specimens and has brought to light many cases in which the formerly so-called non-pathogenic bacteria, such as the Lamblia intestinalis and Trichomonas intestinalis, were found but apparently producing no symptoms. The same condition was also brought out by the study of the stools of a large number of soldiers, both those stationed in tropical countries and those invalided home for various conditions but especially for chronic dysentery. In Flanders, Salonica, and other regions where many foreign troops were stationed during the war, the parasitic intestinal affections have become more or less prevalent.

In support of the belief of many whose studies without a doubt prove that Giardia intestinalis is at least pathogenic for some individuals, the work of the following men would seem quite convincing:

Yakomoff[1] and his coworkers found Giardia as the undoubted cause of many cases of dysentery in their work in the Caucasus. Fantham and Porter[2] and Kennedy and Rosenwarne[3] encountered a number of cases in which only Giardia was found in dysentery cases in soldiers returned to England from Gallipoli. This same group of workers also found a similar condition in a number of cases sent back to England base hospitals from France. Deglos[4] has encountered a number of cases in which he could find no cause for their dysentery other than the Giardia. Stitt[5], through his chance for wide study as a naval officer, states, "Giardia intestinalis is responsible for an intractable diarrhea, an infection only minor in importance to amoebic dysentery." Deschiens[6] in some of the most recent reviews of the work along this line in France, states that of all the cases of diarrhea and other intestinal affections, 3 to 5 per cent are due to Lamblia.

In spite of the fact that quite convincing proof of the pathogenicity of Giardia has been brought out, some still consider them non-pathogenic because the parasite is harbored by many apparently healthy individuals and are causing no symptoms.

Kofoid[7] and Kornhauser and Plate's[8] investigations of 15,000 soldiers, 300 of whom had never been outside of the United States, found 6 per cent infected with Giardia. Hegner and Payne[9] in combining the results of various investigations in England, France, and the United States, of the civilian population at large, the non-dysenteric soldiers and the soldiers who had never been outside of the United States, found 12 per cent infected with Giardia. Wenyon and O'Connor[10] in investigating the healthy British troops in Egypt found Giardia in 6.8 per cent. Reporting on routine stool examinations, Sanford and Logan[20], at the Mayo Clinic, found Giardia in 1 per cent in 6,000 examinations, Smithies[16], at the Augustana Hospital, .5 per cent in 1,000 examinations, and Tsuchiya, at the Battle Creek Sanitarium, .3 per cent in 2,000 examinations. Maxcy[11], at Johns Hopkins, in the examination of 89 children under 12 years of age, reports one out of every five infected with Giardia.

In England, Nutt[12] found 23.9 per cent

of the children in Leeds General Infirmary and 48.8 per cent in the Workhouse carrying this protozoan. Matthews and Smith[13], working in the Liverpool Royal Infirmary, found 14 per cent of 548 children infected in the examination of single stool specimens per case. Some investigators say that children as young as three months harbor the Giardia, but most writers on the subject have rarely found the infection under one year. The summary of the studies of these workers shows the condition more prevalent in children than in adults and would indicate the Giardia a frequent rather than a rare condition in the temperate zone. It is the commonness of the infection, without the production of symptoms in many cases, that lead some authors to contend that the Giardia is non-pathogenic.

In recent years, since the duodenobiliary drainage has become more common, cases have been found in which the stools have not revealed any protozoan. As the duodenum and jejenum are the natural habitat of the Giardia, the work in the near future will no doubt bring to light many more cases, as the frequency of duodenal drainage becomes more prevalent. Hollander[14], in performing drainages on 170 patients, found nine cases of infection by Giardia. None of his patients had ever been in tropical countries but had been residing in New York for many years. Boyd[15] reports some interesting work along this line from the Winnipeg General Hospital. Smithies[16] states that the Giardia may lodge in the gall-bladder and cystic ducts.

In the five cases which have come under my observation during the past year, four were found by stool examination and one by examination of the duodenobiliary drainage specimens. In two of these cases, dysentery was the chief symptom and in each of these two cases Trichomonas intestinalis were also present in large numbers. The other three cases gave a history of intestinal stasis. In one case in which repeated stool examinations showed the Giardia, four consecutive duodenobiliary drainages failed to reveal this protozoan. The case found by duodenobiliary drainage was a neurotic young man of thirty-four years of age who gave a history of paresthesias and vague indefinable symptoms which largely disappeared following treatment. Suggestion, and the patient's belief that this was his main source of trouble, may have been a factor in his relief.

As the protozoan soon loses its motility when cold, stool examinations, and also examinations of duodenal contents, must be made on fresh warm specimens, under high power, where both the protozoan and encysted forms may be found. Most writers are of the opinion that the patient should be on a liquid diet for thirty-six hours preceding the stool examination, and on reporting at the office should be given one ounce of magnesium sulphate or 500 cubic centimeters of Citrate of Magnesia, and that the first stool resulting from this purge be disregarded, the second being examined immediately. Boyd[15] brings out the fact that on examination of the duodenal specimens, many motile protozoan may be found one day, while examination the following day may reveal very few, if any, protozoan either motile or encysted forms, due to the fact that the magnesium sulphate used in these drainages seems to literally blow the protozoa to pieces and only fragments, if any remnants at all of the flagellate, are found.

The treatment as described by different writers is varied and the results reported are in many cases vague and unsatisfactory. Those who have tried out the long list of common anthelmintics have met with little success. Some have given quite glowing reports, but investigation has proved that the cases were not sufficiently studied and the data inaccurate. It would seem so far that no one remedy is effective but that combinations of treatments are the most successful. However, Carr and Chandler[17] report a case where three injections of .6 grams of Neo-Arsphenamine at five-day intervals apparently cured the condition, as studies of the stools after a period of months failed to reveal the recurrence of the infection.

Yakomoff and his workers were successful in freeing laboratory animals of the infection by intravenous injection of Arsphenamine. Kofoid and his associates were able to free the laboratory animals by single injections of Arsenobenzol when given in several times the proportionate dose as estimated by the body weight of the animal. Deschiens states that Giardia resists treatment with emetine and Neosalvarsan which will, however, eradicate amoeba and Trichomonas if coincidental infection exists, but that the daily dose of six grams of sulphur mixed with honey employed continuously for six months had proven satisfactory in eradicating this flagellate in his cases. Hollander[14] reports treatment of three cases. One patient received three duodenal lavages of magnesium sulphate and three injections of .45 grams of Neo-Arsphenamine, taken on alternate days, and was free from infection up to six months after treatment. Two other cases which were treated with three

injections of Neo-Arsphenamine without the duodenal lavage showed Giardia present in duodenal examination nineteen days or more later. Simon[19] reports the disappearance of the infection from the stools in several cases after a number of injections of Arsphenamine but has failed to give the data of his later observations of his treated cases.

Of the five cases (all males) which I have had under observation, four were treated, but only in two cases have sufficient time elapsed and satisfactory observations been made to justify the belief that a cure was effected. No protozoan was found either in the duodenal drainage or normal stool specimens. It is very interesting to note that in one case an achylia gastrica existed and it was thought that the diarrhea possibly was of gastrogenic type, but it failed to clear up after hydrochloric acid was administered. The infection was not found until the fourth stool examination when not only the Lamblia were found but also the amoeba associated with them. This patient was a merchant sixty-six years of age from Ohio. He was given twelve injections of 1.5 grains each of emetine and four intravenouus injections of .6 grams each of Neo-Arsphenamine. The dysentery was relieved. No duodenal specimen could be obtained. Numerous stools were negative for Lamblia or for the cysts, immediately following the treatment and also five months later.

The second case was a contractor, forty-nine years old, from Illinois. The diagnosis made in this case was Intestinal Stasis and Neurocirculatory Asthenia. The infection was found in the second warm stool examination and associated with it was a Trichomonas intestinalis. He was given six Alcrestin (ipecac) tablets daily and four intravenous injections of .6 grams each of Neo-Arsphenamine. Two stools as the result of a purge were negative two days following the treatment.

The third case was a physician, fifty-eight years of age, from Colorado. Six months previous to coming under our care he had six intravenous injections of Neo-Arsphenamine and had used emetine in ¾ to 1.5 grain doses daily for a week and Alcrestin 20 to 30 grains daily the following week. He had alternated this way for several months. The infection was found in the third stool examination but no protozoan in the duodenobiliary drainage specimen. He was given six injections of .6 grams each Neosalvarsan and two stools on two consecutive days following the last injection were negative although cysts were found after the fourth injection. The dysentery disappeared.

The fourth case was a printer thirty-four years of age, from West Virginia, whose case was diagnosed Intestinal Stasis and Neurasthenia with Anxiety. The infection was found in the fifth stool examination and also in the duodenobiliary drainage specimen. He was given four injections of 6 grams each Neo-Arsphenamine and three warm stool specimens were negative following this. Six months later no protozoan either in the stool or duodenobilary specimen was found. We appreciate that two of these cases have not been sufficiently followed, but they were from distant points and so far opportunity for re-examination has not been presented.

CONCLUSIONS

1. Giardia intestinalis is not an uncommon infection and merits more intensive study of its pathogenic relations.
2. This infection, according to the literature, is much more common in children than in adults.
3. Satisfactory study cannot be made in sanitariums or other institutions where patients are from distant points unless opportunity for examination at intervals for six months following treatment can be arranged.
4. Successful study of these cases must include both specimens obtained by duodenobiliary drainage and numerous warm stool specimens obtained at regular intervals following treatment.
5. Warm stool specimens should be examined in all cases where there is a history of chronic or recurrent diarrhea.

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the interchange of certificates of membership. Members removing from one of these states to another may thus avoid the formalities of re-election.

ARTICLE XI.—REFERENDUM

The General Meeting of the Society may, by a two-thirds vote, order a general referendum upon any question pending before the House of Delegates, and the House of Delegates may by a similar vote of its own members, or after a like vote of the General Meeting, submit any such question to the members of the Society for a final vote; and, if the persons voting shall comprise a majority of all the members registered at the session, a majority of such vote shall determine the question and be binding upon the House of Delegates.

ARTICLE XII.—THE SEAL

The Society shall have a common seal, with power to break, to change or to renew the same at pleasure.

ARTICLE XIII.—AMENDMENTS

Sec. 1. The House of Delegates may amend any article of this constitution by a two-thirds vote of the delegates registered at that Annual Meeting, provided that such amendment shall have been presented in open meeting at a previous annual session.

Sec. 2. This constitution shall become effective immediately upon its adoption.

BY-LAWS

CHAPTER I.—MEMBERSHIP

Sec. 1. All members of the component County Societies who are not in arrears for dues, shall be privileged to attend all meetings and to take part in all the proceedings of the Annual Session, and shall be eligible to any office within the gift of the Society except as otherwise provided.

Any member in arrears for dues to the amount of one year or more may regain membership either by paying up all back dues or by being again elected to membership.

Sec. 2. The name of a physician upon the properly certified roster of members, or list of delegates, of a chartered County Society, shall be prima facie evidence of his right to register at the Annual Session in the respective bodies of the Society.

Sec. 3. Each member in attendance at the Annual Session shall enter his name on the registration roster, indicating the component Society of which he is a member. When his right to membership has been verified by reference to the roster of his Society he shall receive a badge, which shall be evidence of his right to all the privileges of membership at that session. No member or delegate shall take part in any of the proceedings of the Annual Session until he has complied with the provisions of this section.

CHAPTER II.—GENERAL MEETINGS

Sec. 1. The General Meetings shall include all registered members and delegates who shall have equal rights to participate in the proceedings and to vote on pending questions. Each General Meeting shall be presided over by the President or, in his absence, by the Vice-President.

Sec. 2. The following shall be the order of business of the first General Meeting:

1. Call to order.
2. Invocation.
3. Address of welcome.
4. Report of the House of Delegates.
5. President's address.
6. Special addresses.
7. Resolutions and motions.
8. Nominations for President.
9. Appointment of Committees.

SECOND GENERAL MEETING

1. Call to order.
2. Report of House of Delegates.
3. Report of Committees.
4. Resolutions.
5. Election of President.
6. Introduction of President-Elect.
7. Adjournment.

Sec. 3. The General Meeting or any of the sections may recommend to the House of Delegates the appointment of committees or commissions for scientific investigations of special interest and importance to the profession and the public.

CHAPTER III.—HOUSE OF DELEGATES

Sec. 1. A delegate must have been a member of the Society for at least two years.

Sec. 2. The House of Delegates shall meet annually at such date as is designated for the Annual Meeting of the Society. It shall adjourn from day to day as may be necessary to complete its business, specifying its own time for the holding of its sessions.

Sec. 3. Thirty members shall constitute a quorum.

Sec. 4. A delegate once seated shall remain a delegate through the entire session and his place shall not be taken by any other delegate or alternate.

Sec. 5. The officers of the House of Delegates shall be Speaker, Vice-Speaker and Secretary. The Secretary of the State Society shall be its Secretary.

Sec. 6. (a) The House of Delegates is the legislative body of the Society. It has authority to adopt and institute such methods and measures as it may deem most efficient for the upbuilding and establishing of the interests of the profession in Michigan.

(b) It shall concern itself and advise as to the interests of the profession and of the public in those matters of legislation pertaining to medical education, medical registration, medical laws and public health.

(c) It shall be active in the education of the public in regard to medical research and scientific medicine.

(d) It shall elect delegates to the American Medical Association in accordance with the ruling of that parent organization.

(e) It shall divide the state into Councillor districts and direct the formation of District Societies.

(f) It shall have authority to appoint committees, standing or special, from among its members or the members of the Society. Such committees are to report to the House of Delegates and their members may participate in the debate upon their committee's report.

(g) It shall approve all memorials and resolutions in the name of the Society before the same shall become effective. Provided, that in the ad interim, in the presence of necessity for prompt action, the Council is empowered to act in behalf of the Society.

(h) It shall hear appeals from the Council in matters pertaining to disciplinary action of County Societies.

(i) It shall have authority to create or disband County Societies upon petition of the members residing in the County concerned. It shall issue and revoke charters of County Societies.

(j) It shall elect the four Vice-Presidents, Councillors, Speaker and Vice-Speaker. The Council shall elect the Secretary-Editor, Treasurer and Chairman of the Medico-Legal Committee. The President shall be nominated and elected in a General Meeting.

(k) The House of Delegates shall provide for the division of the scientific work of the Society into appropriate sections. It shall prescribe the rules governing the meetings of these sections and the election of section officers.

(l) It shall present a summary of its proceedings at the General Meetings of the Society and publish its minutes in The Journal.

(m) It shall have the following standing and business committees.

1. Committees on—
   (a) Reports of Council,
   (b) Reports of Officers and Committees,
   (c) Nominations and elections,
   (d) Miscellaneous business,
   (e) Special committees.

(n) No new business shall be introduced in the last session of the house without unanimous consent of the delegates except when presented by the Council. All new business so presented shall require three-fourths affirmative vote for adoption.

(o) Robert's Rules of Order shall govern the House of Delegates when not in conflict with the Constitution and By-Laws.

CHAPTER IV.—SECTIONS

Sec. 1. Sections shall hold their meetings at such time and place as will not interfere with General Meetings.

Sec. 2. Sections are subject to the rulings and regulations provided by the House of Delegates for their government.

Sec. 3. At each Annual Meeting, a section chairman shall be elected by the members of the section to preside at the following Annual Session. A Section Secretary shall be chosen each second year to serve for two years or until his successor is elected.

Sec. 4. The program of each section shall be arranged by the Scientific Committee of the Society.

Sec. 5. No paper shall be presented, the reading of which consumes more than fifteen minutes. No paper shall be read by title without the consent of the section members. Discussions shall be limited to five minutes. Papers and discussions presented before any Section or General Meeting become the property of the Society and shall not be published elsewhere without the consent of the Publication Committee of the Council.

Sec. 6. Each section may appoint committees which shall investigate and report back concerning such matters as are of especial interest to such sections.

Sec. 7. The following sections shall compose the scientific assembly of the Society:

1. General Medicine.
2. Surgery.
3. Obstetrics and Gynecology.
4. Ophthalmology and Oto-Laryngology.
5. Pediatrics.
6. Public Health.

CHAPTER V.—ELECTION OF OFFICERS

Sec. 1. All election of officers shall be by secret ballot and a majority of votes cast shall be necessary to elect. In the event that there is but one nominee for a given office a viva voce vote may be taken.

Sec. 2. The House of Delegates shall be the electoral college.

Sec. 3. The Speaker and Vice-Speaker shall be nominated from the floor of the House.

Sec. 4. A nominating committee shall be appointed by the Speaker. The duty of this committee is to nominate candidates for the office of Vice-Presidents, Delegates and Alternates to the American Medical Association, and all other officers that may be hereafter provided for. It shall report to the House of Delegates nominations for Councillors as made by the majority vote of the delegates from their respective districts. It shall also submit recommendations for the places in which Annual Meetings are to be held.

Sec. 5. The election of officers shall be the first order of business at the last session of the house.

Sec. 6. The Secretary-Editor, Treasurer and Chairman of the Medico-Legal Committee shall be elected by the Council.

Sec. 7. The term of a newly elected officer shall begin at the adjournment of the House and shall continue until his successor is elected.

CHAPTER VI.—DUTIES OF OFFICERS

Sec. 1. The President shall preside at all General Meetings of the Society, shall fill all vacancies in consultation with the Council unless otherwise provided for; shall appoint the members of all committees not otherwise provided for; shall deliver the President's annual address; shall, as far as practicable, visit component County Societies. He shall have a voice in the deliberations of the House of Delegates; he shall be an ex-officio member of the Council.

Sec. 2. The Vice-Presidents in the order of their seniority shall perform the duties of the President in his absence or upon his request. In case of death of the President or resignation, the First Vice-President shall officiate during the unexpired term.

Sec. 3. The Treasurer shall be the custodian of all the funds and securities of the Society. He shall be elected by the Council and accountable through the Council to the Society. He shall disburse no funds except upon a voucher signed by the Chairman of the Council, the Secretary and the Treasurer. The funds of the Medico-Legal Committee shall not be disbursed except on voucher signed by the Chairman of the Medico-Legal Committee, Chairman of the Council and the Treasurer. He shall invest the surplus funds of the Society only on approval of the Council.

Sec. 4. The Secretary-Editor shall be the custodian of all the records of the Society, he shall conduct all the official correspondence of the Society at the direction of the House of Delegates, the Council and the officers of the Society. He shall be the Recording Officer of the House of Delegates, the Council and the Scientific Assembly and ex-officio member of those bodies. He shall also discharge the following duties:

1. Collect membership dues, keep membership records and issue membership certificates.
2. He shall conduct the correspondence with component County Societies.
3. He shall make all required reports to the American Medical Association.
4. He shall act as one of the delegates to the American Medical Association.
5. He shall deposit all funds received with the Treasurer.
6. He shall render an Annual Report to the Council reviewing the Society's activities and imparting recommendations for the advancement of the Society's interests.
7. He shall perform such other duties as the Council may direct. Under the direction of the Council he shall be the Editor and Business Manager of the Journal, performing all duties concerned with the issuance of that publication.
8. He shall superintend the making of all arrangements for the holding of all meetings in compliance with the Constitution and By-Laws and the instructions of the House of Delegates and Council.
9. He shall send out all official notices of meetings, committee appointments, certificates of election to office and special duties of committees.
10. He shall receive and transmit to the House of Delegates and the Council all committee and officers' reports.
11. He shall be elected by the Council and shall be remunerated by a salary, the amount of which shall be fixed by the Council.

CHAPTER VII.—THE COUNCIL

Sec. 1. The Council is the executive body of the Society. It shall determine its own time and place of meeting. It shall elect its own Chairman and Vice-

Chairman to serve one year. Its Annual Meeting shall be held co-incident with the Annual Meeting of the Society.

Sec. 2. The Council, between meetings of the House of Delegates, may legislate as the House of Delegates upon any matter over which the House of Delegates has jurisdiction, but such legislation shall be consistent with any action taken by the House of Delegates and shall not nullify any action taken by the House.

Sec. 3. Collectively, the Council shall be the Board of Censors of the Society. It shall consider all questions involving the right and standing of members, whether in relation to other members, to the component Societies, or to this Society. All questions of an ethical nature brought before the House of Delegates or the General Meeting shall be referred to the Council without discussion. It shall hear and decide all questions of discipline affecting the conduct of members or of a County Society, upon which an appeal is taken from the decision of an individual Councillor. Appeal may be taken to the House of Delegates.

Sec. 4. It shall make careful inquiry into the condition of the profession of each county in the state, and shall have authority to adopt such methods as may be deemed most efficient for building up and increasing the interest in such County Societies as already exist and for organizing the profession in Counties where Societies do not exist. It shall especially and systematically endeavor to promote friendly intercourse between physicians of the same locality and shall continue these efforts until every reputable physician of the state has been brought under the Society's influence.

Sec. 5. It shall, upon application, provide and issue charters to County Societies organized in conformity with the spirit of this Constitution and By-Laws.

Sec. 6. In sparsely settled sections it shall have the authority to organize the physicians of two or more Counties into Societies, to be designated by a suitable name so as to distinguish them from district and other classes of Societies. These Societies when organized and chartered, shall be entitled to all the privileges and representation provided herein for County Societies, until such Counties may be organized separately.

Sec. 7. The Council shall direct and control the publication of the Journal.

Sec. 8. The Council shall approve the expenditure of the funds of the Society. The House of Delegates, by two-thirds vote, may direct the expenditure of any appropriation disapproved by the Council. In the event the Council does not approve action by the House of Delegates appropriating definite amounts of expenditure, it shall submit within twenty-four hours its reasons therefor to the House of Delegates. In case of dispute the action of the House shall be final.

Sec. 9. The Council shall appoint the members of the Medico-Legal Committee and supervise the duties and work of that Committee.

CHAPTER VIII.—STANDING COMMITTEES' DUTIES

Sec. 1. The Standing Committees of the Society shall be as follows:

(a) Committee on Legislation.
(b) Committee on Scientific Work.
(c) Committee on Public Health Education.
(d) Medico-Legal Committee.

Sec. 2. The Committee on Legislation shall consist of five members serving five years each, one new member being appointed each year by the President. The first appointments under this section are to be made for one, two, three, four and five years respectively.

The Committee on Legislation shall utilize every organized influence of the profession in promoting such legislation concerning public health and scientific medicine as will be of greatest benefit to the public.

It shall work under the direction of the House of Delegates or of the Council when the House is not in session.

No bill or proposed law or amendment thereto shall be introduced in the State Legislature or sent to any member thereof in the name of this Society or by any of its committees until such proposed legislation shall have been indorsed and approved by the Council of this Society in regular session.

It shall submit an Annual Report with recommendations to the House of Delegates.

Sec. 3. Committee on Scientific Work:

This Committee shall consist of the President, Secretary and officers of constituted sections. It shall be the duty of this Committee to arrange the programs for the section meetings.

Section 4. Committee on Public Health Education:

This Committee on Public Health Education shall consist of five members serving five years each, one new member being appointed each year by the President. The first appointments under this section are to be made for one, two, three, four and five years respectively.

It shall be the duty of this Committee to join with representatives from the Medical Department, University of Michigan, Detroit College of Medicine and Surgery, Michigan State Anti-Tuberculosis Association, Michigan Association Welfare League, State Department of Health, Michigan State Dental Society and Michigan State Nurses' Association for the purpose of carrying out an educational program to enlighten the public of Michigan in regard to scientific medicine.

Sec. 5. Medico-Legal Committee:

The Medico-Legal Committee shall consist of an executive board of five, to be elected by the Council, and also one member from each component Society to be elected by the component Societies. The executive board shall be elected for one, two, three, four and five years, respectively, and thereafter one member shall be elected each year to hold office for five years. All other members of the committee shall be elected for one year.

The members of the executive board shall be elected at the January meeting of the Council and shall immediately assume office. Members of the Medico-Legal Committee shall be elected, one by each component Society participating in the defense fund, at the first meeting after September 1st and shall assume office January 1st following.

The Council at its January meeting shall elect one of the five members of the Executive Board as Chairman, whose term of office shall be for one year. He shall also act as Chairman of the entire Committee.

No disbursement shall be made from the Medico-Legal fund without the signatures of the Chairman of the Executive Board and the Chairman of the Council or the Secretary of the State Society.

The salary of the Chairman of the Medico-Legal Committee shall be fixed by the Council annually.

The Executive Board shall report to the Council at its Annual Meeting, giving full particulars of the work of the Committee and a detailed statement of income and disbursements.

It shall engage by the year a competent firm as general attorneys and fix their compensation. Their duties shall be to compile from all available sources court decisions fixing the law of liability of physicians for civil malpractice, such compilations to be the property of the Society, and also to defend any member of the Society not in arrears, when sued or threatened with suit for civil malpractice, or to supervise such defense through a local attorney.

Members in arrears after April 1st shall not be entitled to defense for any suit, the cause of action of which arose while in arrears, and any member sued or threatened before joining the Society or before the organization of the Medico-Legal fund must pay the actual cost of defense in such suit.

With the exception above noted, the Medico-Legal Committee shall undertake the defense of any members of the Society sued or threatened with suit for civil malpractice through all State and Federal Courts operating in Michigan, regardless of the time when the alleged cause for action arose and shall also defend any action for civil malpractice against the estate of a deceased member, provided he or she, while living, has conformed to the foregoing requirements.

In the event that during any one year the demands upon the Medico-Legal fund be large enough to exhaust it, the Council shall be authorized to loan sufficient funds from the Treasury of the State Society to meet the contingency.

It shall be the duty of any member of the Society threatened with action for civil malpractice to confer at once with the member of the Medico-Legal Committee from his component Society and with his aid prepare the case and forward the same to the chairman of the Executive Board. He must agree not to settle or compromise his case without the consent of the Executive Board and the general attorneys. He may recommend, in conjunction with the local member of the Medico-Legal Committee, the best available local attorney, but the authority to engage the services of local attorneys shall lie with the Executive Board and their general attorneys. The local attorney chosen shall enter the appearance of his client and undertake his defense under the supervision of the general attorneys.

All attorney's fees and costs will be paid from the Medico-Legal fund and defense carried through all federal and state courts operating in Michigan, but under no circumstances shall this fund be liable for any damages declared against an unsuccessful litigant.

CHAPTER IX.—EMERGENCY

Sec. 1. When prompt speech and action are imperative, authority to speak and act in the name of the Society is invested in the Council.

CHAPTER X.—ANNUAL DUES

Sec. 1. The annual assessment shall be ten dollars. The Secretary of each County Society shall collect and forward the same to the State Secretary.

Sec. 2. Members in arrears after April 1st of the official year shall be suspended and shall not participate in the benefits of the Society until reinstated.

CHAPTER XI.—COUNTY SOCIETIES

Sec. 1. All County Societies now in affiliation with the State Society or those which may hereafter be organized in this state, which have adopted principles of organization not in conflict with this Constitution and By-Laws or with the Code of Ethics of the American Medical Association, shall upon application to the Council, receive a charter and become a component part of this Society, subject to the condition described in Section four of this chapter. A roster of its officers and members and the annual assessment and subscription to the Journal for each member must accompany the application.

Sec. 2. As rapidly as can be done after the adoption of this Constitution and By-Laws a Medical Society shall be organized in every County in the State in which no comonent Society exists.

Sec. 3. Charters shall be issued only upon approval of the Council, and shall be signed by the President and Secretary of this Society. The Council shall have authority to revoke the charter of any component Society whose actions are in conflict with the letter or spirit of this Constitution and By-Laws or the code of ethics of the American Medical Association.

Sec. 4. Only one component Medical Society shall be chartered in any County. Where more than one County Society exists, friendly overture and concessions shall be made, with the aid of the Councillor for the district if necessary, and all of the members brought into one organization. In case of failure to unite an appeal may be made to the Council which shall decide what action shall be taken.

Sec. 5. Each County Society shall be the judge of the qualifications of its own members; but, as such Societies are the only portals to this Society and to the American Medical Association, every reputable and legally registered practitioner of medicine shall be eligible to membership. Before a charter is issued to any County Society, full and ample notice and opportunity shall be given to every eligible physician in the County to become a member.

Sec. 6. Any physician who may feel aggrieved with the action of the Society of his County in suspending or expelling him from membership shall have the right of appeal to the Councillor of his district.

Sec. 7. In hearing appeals the Council or the Councillor may admit oral or written evidence as in their judgment will best and most fairly present facts. Efforts at conciliation and compromise shall, however, precede all hearings.

Sec. 8. When a member in good standing in a component Society moves to another County in this state he shall be given without cost a transfer card good for the time for which his dues are paid, not exceeding one year from the first of January following the date of issue. This card shall be void if not accepted by a component Society before such limit expires.

Sec. 9. A physician living near a county line may hold his membership in that county most convenient for him to attend, on permission of the Society in whose jurisdiction he resides.

Sec. 10. Each County Society shall have general direction of the affairs of the profession in the county, and its influence shall be constantly exerted for bettering the scientific, moral and material condition of every physician in the county; and systematic efforts shall be made by each member and by the Society as a whole, to increase the membership until it embraces every qualified physician in the county.

Sec. 11. At the annual meeting in the fall, or at the first meeting after January 1st, due notice having been given, each County Society shall elect annually a delegate and an alternate to represent it in the House of Delegates of this Society. In case a County Society has more than fifty members it shall be entitled to one delegate for each fifty members or major fraction thereof. The Secretary of the County Society shall immediately send the list of its delegates to the Secretary of this Society.

Sec. 12. The Secretary of each County Society shall keep a roster of its members, and a list of the non-affiliated physicians of the county, in which shall be shown the full name, address, college and date of graduation, date of license to practice in this state and such other information as may be deemed necessary, upon blanks supplied him for the purpose, together with remittance for such collections, to the state secretary.

CHAPTER XII

These By-Laws may be amended by majority vote of the delegates present, after the amendment has laid on the table one day. These By-Laws become effective immediately upon adoption.

The Journal
OF THE
Michigan State Medical Society
ISSUED MONTHLY UNDER THE DIRECTION OF THE COUNCIL

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J. D. Bruce.....Saginaw

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JULY, 1924

Report Malpractice Threats Immediately to Doctor F. B. Tibbals, 1212 Kresge Building, Detroit, Mich.

Editorials

A. M. A. CHICAGO MEETING

The annual meeting of the American Medical Association that was held in Chicago the week of June 9th was attended by some 400 Michigan members. The complete records of the meeting will be found in the minutes that are being published in the Journal of the American Medical Association. In this issue we are imparting what may be well appraised as two important features of that meeting, President Wilbur's address and a Supplemental Report of the Judicial Council. The meeting as a whole may be appraised as having manifested the following outstanding features: Largest attendance in the history of the Association; compact arrangements of the Pier, whereby all sections were easy of access; exceptional interest in the scientific program; extraordinary scientific and commercial exhibits; a clinical program that was continuous from 9 a. m. to 4 p. m.; hotel accommodations so well managed that the guests were relieved of extra funds by the exhorbitant rates charged; a House of Delegates that demonstrated a very commendable interest in the profession's problems by the sincerity they manifested in the endeavor to enact desirable policies and principles. That's it in a nut shell.

Incoming President, Dr. Pusey, delivered a splendid address that did honor to himself and to the Association. It outlined a situation that exists and is being developed. We trust that there are those in Michigan who will make it their business to assist in solving the problem.

Our State Society was well represented in the House of Delegates by Doctors Hornbogen, Brook, Luce and Frothingham. In addition, Doctors B. R. Shurly and L. J. Hirschman represented two of the Scientific Sections. These delegates will present a more detailed report at our annnual meeting in Mt. Clemens.

Dr. W. D. Haggard of Nashville, Tenn., was chosen as president-elect. Dr. Haggard is a well known surgeon, affiliated with the Vanderbilt University, and well merits the honor that was thus bestowed upon him. Doctors J. H. Walsh of Chicago, E. B. Heckel of Pittsburgh, and T. McDavitt of St. Paul, were elected as members of the board of Trustees. Olin West of Chicago was re-elected secretary and Austin Hayden of Chicago was re-elected treasurer. Your Secretary-Editor was re-elected Speaker of the House of Delegates. An expression of preference for Atlantic City was given as the place for the holding of the next annual meeting of the Association in 1925.

REVISION OF OUR CONSTITUTION AND BY-LAWS

At the last session of the House of Delegates a committee was appointed to present a new Constitution and By-Laws for adoption at our 1924 annual meeting. In order that members and delegates might be thoroughly conversant with the provisions contained in such a revision, instructions were given that the new draft be published in the Journal at least two months before the annual meeting.

The committee's report is contained in this issue. Under the direction of the chairman of the committee, Dr. J. G. R. Manwaring of Flint, much time and thought has been given to the preparation of their report. It is now urged that each delegate study this proposed new Constitution and By-Laws so that he may be able to vote intelligently when it is taken up for consideration by the House of Delegates at the annual meeting in Mt. Clemens.

JOBBING YOUR SERVICES AND TIME

One great criticism that may be laid at the door of doctors is that they jump at conclusions and enter into movements with far too little thought as to the final result and situation that will be developed. We have all heard of life extension institutes and examinations un-

der one name or another, but all of them embody the same plan and scheme. Many became affiliated, many became local examiners and many thought only of the three or five dollars. A few there were who gave thought to the situation that would be the outcome. We are grateful to the Judicial Council of the A. M. A. for presenting the problem to the profession, as they have so ably done in the following report. If you or any of your associates are jobbing your services and time to lay corporations and allowing them to profit thereby and also undermine the profession's independence, we recommend that you read this report and learn the degrading influence of such a practice.

SUPPLEMENTARY REPORT OF JUDICIAL COUNCIL

To the Members of the House of Delegates of the American Medical Association:

The medical profession is confronted today with one of the most important and serious problems that it has been called on to meet. Briefly, and in business parlance, the question is: Shall the medical profession vend it products directly to the consumer or shall it sell them to a middleman or third party? This question comes to the attention of the Judicial Council by reason of the extensive propaganda that is being waged at the present time in regard to periodic health examinations. The American Medical Association has gone on record through this House of Delegates favoring periodic examinations, and this Council concurs in the desirability of such examinations being made. At the last meeting of the House of Delegates, however, the question now raised was not considered. Since then a number of commercial organizations have entered the field and, as middlemen, or jobbers, are offering to furnish periodic medical examinations to the public generally for a stated sum per annum and to send reports of the findings at the examination to the examined; and some of these organizations are giving advice to the examined as to what they should do for the conditions found. These examinations, of course, can be made only by physicians; hence, these companies are signing up contracts with physicians throughout the country to make examinations of all persons sent to them by the praticular company holding the contract, and to forward the reports directly to the company.

THE INDEPENDENCE OF THE PHYSICIAN

For these examinations, the company pays the physician a definite price and then sells the results of the examination to the individual examined at a much higher price. In other words, these companies acting as jobbers buy the physician's services at one price and sell them to the public at another. The questions that should receive the most serious and earnest consideration of this House of Delegates are: Should the physician deal with the jobber, or should he sell his services directly to the consumer? and, What is going to be the ultimate effect on the independence and the welfare of the physician as a result of thus dealing through a jobber, or middleman?

When a physician signs a contract with a commercial organization to make physical examinations of all persons sent to him by the organization for a price set by the organization, and allows that organization to make its own charge to the individuals examined for the services rendered by the physician, the physician is selling his independence to the jobber. One of the largest jobbers in this line buys the services of the physician for $5 and sells it to the individual for $20 or $25. It is the knowledge of the physician that gives value to the services, and this value is not enhanced or increased any by passing through the jobber's hands.

SOME FINANCIAL FIGURES

One of the arguments advanced by institutions of the kind in question is that they are doing a great public service in their propaganda for periodic medical examinations, or, as they sometimes call it, preclinical medicine, and that their work, therefore, is largely altruistic and plilanthropic. We will not attempt to argue the question of the value of periodic physical examinations, as that is not in issue at this time; but some attention may be directed very profitably to the claims of altruism and philanthropy. One of the institutions already in the field, a stock corporation organized for profit, was capitalized for $200,000 preferred stock, and three shares of common stock were issued for each share of preferred. The preferred stock was increased to $236,000 paid in, and recently a preferred stock dividend of $90,000 was paid, but no common stock was issued with it. The authorized capital stock is now $400.000 preferred stock, of which some $326,000 is outstanding. The amount of common stock outstanding is $689,100, or a total of $1,015,100. During the year 1923, the earnings of this company were $611,146.93, and the profits $55,217.96. During the three months of November and December, 1923, and January, 1924, the operating profits were $4,007.67, $6,176.29 and $6,932.91, respectively, each month showing a material increase over the previous month. At this rate the profits for the year would amount to approximately $70,000, or 21 per cent on the preferred stock outstanding or 30 per cent on the actual money paid in. During the same three months the work done in the roentgen-ray laboratory alone amounted to $35,881.20, which is at the rate of $143,524 a year.

It is said that two-thirds of the outstanding common stock has been trusteed and that the dividends, if any, on this trusteed common stock are to be applied to public health work. As no dividends have been paid on common stock, no public health work has been done by the trustees holding the trusteed stock. In addition to the individual examinations made, this company has contracts with thirty-nine old line insurance companies to furnish them with reports on all examinations made of their policyholders. It also contracts with industrial plants to make examinations of all of their employes. The company pays the physician only $2.50 for examinations made of all policyholders in insurance companies with which it has contracts, and then sells the information which it receives from the physician to the insurance company for $5. The examinations of employes of industrial plants are made by physicians sent directly from the home office of the company and not by the local physicians.

WHAT IS BEST FOR THE PUBLIC?

In view of the fact that this company is a stock company organized for profit, that it has paid a large stock dividend, and that its earnings are now increasing annually, its claims to altruism and public benefaction are proper subjects for investigation and analysis. It is further claimed by this institution that the work it is doing is of great value to the physician, at least to those physicians who have signed contracts to market their products through the company. In a recent letter from this company, it is stated: "It must be conceded that we are giving a powerful impulse to the development of the general practitioner, not only in the matter of encouraging the people to consult him but in stimulating him to broaden his diagnostic work and adjust himself to this ever-increasing public demand for preclinical service." There are several things stated in this sentence which deserve atten-

tion. It is stated that "it must be conceded that we (the institution) are giving a powerful impulse to the development of the general practitioner." Is it conceded by the profession that it was necessary for a commercial institution to enter the fiefild of medicine to buy and sell the product of the physician's brains in order to stimulate the development of the physician? Is it conceded that making examinations for a commercial organization for $5 each, which the company immediately sells to the examined for four times that amount, is a powerful impulse to the development of the physician's ability? Does it stimulate the diagnostic work of the physician to have the work bought by a jobber at one price and immediately resold to the consumer at a much higher price? Is there such a revolution taking place in the practice of medicine by its commercialization by stock companies, organized for profit, that it is necessary for the physician to readjust himself to the new order of things? If these things are true, it is certainly time for the profession to rouse itself from its slumber of inertia before it is shorn of its strength by the Delilah of commercialism. This is not a case of the good of the public versus the good of the profession. If it were, there would be no question at issue, for the profession always has and always will yield its own interests to that of the public good; but it is a case in which the public good can be best served only by what is best for the profession.

EIGHT THOUSAND EXAMINERS FOR ONE COMPANY

One of these institutions claims to have 8,000 physicians on its list of examiners. That so many medical men have been induced to consent to give their services for a small remuneration to a company to resell to the individual can be understood only by assuming that they failed to analyze the situation and to comprehend its significance. And this brings us to the question of what is going to be the effect on the independence and the welfare of the physician of thus dealing with a jobber. It should be remembered that all reports are sent directly to the home office, the examiner having no copy of them, and having no records of the cases examined. Furthermore, the examination made by the physician is not complete in that one of the most important elements in the examination is not made by him; namely, an examination of the urine. When the person to be examined receives notice to present himself to the physician for examination, he also receives a container with instructions to fill it with his urine and mail it at once directly to the home office. It might appear from this that the home office, while having confidence in the local physician's ability to make an examination of the blood, heart, lungs, eyes, nervous system, etc., thought him incompetent to make an ordinary examination of the urine. To us, however, it has a deeper significance. If there is one thing that the laity has been led to believe, it is the value of an occasional uninalysis. The home office, therefore, has the individual send a specimen of urine at stated intervals for examination. As these specimens do not pass through the hands of the local physician, the only place where the individual can obtain information concerning his condition is from the home office. The individual thus becomes, as it were, tied to the home office. It is evident that in time the home office and it alone will be in possession of full information of the physical condition of a very large number of individuals which will be of very great value to it. This is already shown by the fact that thirty-nine insurance companies have contracted to pay $5 apiece for information concerning its policyholders. It requires no stretch of the imagination to see insurance companies obtaining in this way information concerning the physical condition of nonpolicyholders with a view of soliciting insurance without the necessity of further medical examination. Corporations, business firms and others may likewise apply to the home office for information concerning the physical condition of employes, business associates, and others, and without going into further detail it is easy to see many ways in which the accumulated information may be of great pecuniary value to the home office, with corresponding loss to the medical profession.

THE INTEREST OF THE PATIENT AND THE ENCOURAGEMENT OF MEDICAL PROGRESS

Individualism in the practice ofm edicine is essential to success if one has in mind the interest of the patient and the encouragement of medical progress; but we should distinguish very clearly between those things which are of purely individual concern and those which concern the welfare of the profession as a whole. In the one case, the problems may safely be left to each one to work out for himself; while, in the other, co-operation and collective effort are absolutely indispensable to self-preservation. The relation between the patient and the physician is an individual matter, and anything that disturbs this relationship is detrimental to the best interest of the patient. We cannot help but feel that the service of periodic health examinations, as conducted by commercial institutions, must inevitably result in the undermining of the confidence of the people in the ability of the practitioner. While these examinations are made by local physicians to whom the individuals are sent by the home office, it is made clear to them that it is necessary for the home office to complete the examinations by making the urinalyses, and, furthermore, it is impressed on them that the home office alone is competent to interpret the findings of the physicians making the examinations and to report the results to the examined. This is well shown by the fact that, in the blank which the individual himself is to fill out, space is left for the following: "Any question you may wish to ask regarding your health" and again: "Give address to which all reports are to be sent." From the foregoing it is perfectly evident that the person examined is led to believe that the physician making the examination is not competent to answer any questions regarding his health, and that all communications on the subject should be addressed to the home office.

WHAT WILL THE NEXT STEP BE?

While the institution claims that it does not advise the patient as to treatment but refers him to his physician or to the examiner for any treatment which the home office may think necessary, it does advise as to diet, exercise and hygienic measures, which, however, are held not to constitute treatment. It is but a short step from what is now being done to what may be done in the way of treatment; and while it is denied that the institution intends to treat patients, we believe that it is n outnfair to assume that the idea is not entirely foreign to the medical director, for in a letter recently received from him he said: "I am sure from my own knowledge of the situation that the public will not receive kindly any action on the part of the organized medical profession reflecting an undiscriminating condemnation of all efforts to render *hygienic* and *medical service* to the public aside from that rendered by the general practitioner." It is not difficult to see in this statement a veiled threat directed against this organization, as well as a gentle hint that medical service may be rendered to the public by institutions, aside from that rendered by the general practitioner. Medical service in this connection can mean nothing but treatment of the sick. Institutions of the kind under discussion are almost certain to drift into treating patients, just as commercial laboratories that started out with the idea of doing only laboratory work are now giving treatments to certain patients who applied to them for laboratory examinations.

We believe that enough has been said to show the importance of the subject, and feel that it is incumbent on this body to devise ways and means of setting the public aright on the question of periodic health examinations, and to convince the people that the proper person to make such examinations and to give advice relative thereto is the family physician, aided, when necessary, by local specialists.

M. L. HARRIS, Chairman.
W. S. THAYER.
J. C. CHASE.
J. N. HALL.
F. W. CREGOR.
OLIN WEST, Secretary.

CONFRONTING PROBLEMS

Because of the man, his experience, ability to judge and because of his keen and clear perception of the problems that are confronting the medical profession, we are reprinting the address that was delivered by President Wilbur to the House of Delegates of the American Medical Association at the recent Chicago meeting. Especially do we urge serious reflection upon his comments regarding our relationship to the public and questions of public health activity and that part relating to medical education. The time is at hand when Michigan doctors, through their state society, must outline a policy that will keep us abreast of the times. It is hoped that this may be accomplished at our next annual session. President Wilbur's advice merits your consideration.

Mr. Speaker, Delegates and Trustees of the American Medical Association:

This past year has been a very pleasant one for me. As President of this Association and last year as President-Elect I have had a return of that friendly, kindly professional feeling that you all know. It is a great thing to be a member of an association like this, the member of a great profession. There is a friendliness about it that I think transcends that of any other profession. I can say quite frankly I have had a very pleasant and happy time, and I have enjoyed my associations with you men and other members of the profession. Wherever I have gone in the United States, I have found a lot of fine medical men interested in the Association and in the affairs of the profession and in the welfare of their communities. It has been a pleasure to see them because they have something that you do not find so often among other men, a certain unselfishness in their relationship to the public, and the public appreciates that. Sometimes they take a rather awkward way of showing us that, but they really do.

Now, I have been thinking a good deal during this year about the future of the medical profession, particularly in this country. Great forces are stirring in every part of society. I can illustrate the thing in my mind by giving you an illustration. The telephone company has had in the United States an almost unparalleled advance, and except in a few local instances there has been no particular problem from the legal standpoint and the political standpoint in repard to the telephone. It has extended its services everywhere. It has kept its rates on a level so that anybody could use the telephone, and it has provided a great public service. On the other hand, the railroads seem to be always in difficulties. They do something similar on a more extensive scale to that which is done by the telephone. It is largely a difference in the way the problem has been managed.

Mr. Theodore Vaile understood the public and was always ahead of the public in the things that the telephone could offer, always seeking new methods and putting them into effect. The railroad presidents, on the other hand, are usually about ten years behind the times on many things they tackle. They are always, consequently, in hot water, always up before bureaus for investigation and before Congress for study, and they are always fighting legislation; after they get it they stand for that and fight the next, and so on.

Now, the question for the medical profession is: Which method are we going to adopt? Are we going to be up with the game or are we going to be ten years behind? Because we must study these great social processes that are going on and the relationship that the profession bears to them. We can do it and I feel that we must.

We get lost every once in a while on things that come along. One of the greatest advantages in the United States of America is that we have forty-eight states. Any state can try an experiment, and if it is a bad one it alone suffers. If it is a good one, the others can profit by it. So we have a chance with an organized profession in forty-eight states to try out various devices. For the most part, the things that are being tried out are tried out on us instead of by us, because others are forcing our hands. We have not kept the game in our control.

The development of preventive medicine and of public health since the inauguration of the public health of today based on bacteriology has been of such a character that many have thought that the whole control of health should go over to the state. Now, it seems to me there is a dividing line which can be made and that we ought to have a definite series of studies along that line. The state is interested in the protection of individuals from contagious diseases. It has a right and it is willing to spend sums of money for that purpose. It seems to me that the state is not responsible for people who have resources of their own for their medical or surgical care. There are necessarily certain services that must be rendered to the indigent, to the insane and to the prisoner. It seems to me, too, that we must keep individualism in medicine if it is to advance, and we must keep individual relations between patients and physicians if medicine as an art is to go forward. The minute we allow a bureaucracy to step in between the physician and the patient, it seems to me we have taken the one step that will degrade our professon and that will put us so that we cannot render ideal professional services to patients.

Now I think that we ought gradually to get a definition in the minds of the public of what the taxpayers should pay for in health matters, and that we should at the same time have a clear understanding of what our responsibility is, and then meet that responsibility as we can do only by proper organization. We have tried by a method of somewhat over-standardization to handle medical education and some other medical affairs. You cannot standardize the price or the cost of taking out tonsils, because it is not simply a mechanical operation. One time you do it on a Chinese patient that cannot answer back or talk, and who does nothing but open his mouth and expectorate afterward. The other time you do it on a child with a mother and father and uncle and aunt and so on whom you have to spend a great deal of time on. In other words, since time is really the only thing a physician has to sell, he is the man that

has to decide the individual responsibility he is taking in individual cases and the time consumed. When we get too much standardization, even in the charges that are being demanded, it seems to me that again we are interfering with the individual.

We can, though, develop a high sense of professional responsibility and a desire to play fair with the public and the other men in the profession, and I think that if you will analyze it carefully, you will admit that much of our success has been due to the fact that this has been the basis of medical association and medical organization.

I think as I look over my experience of the past year in the different groups to whom I have talked that the time is ripe for a considerable change in medical practice. I think we are going to accomplish something in medical education and prepare men somewhat better for medical practice than we have, because we are doing more to emphasize the clinical. I think we are beginning to train our students more to really take care of the sick than simply to diagnose the sick as they have been inclined to do in the past. But it seems to me that with the change in the type of illness, with the development of office practice, with the great social changes that are going on now so that people are flocking to the cities and leaving the country, and with the development of the hospital, we have a whole series of problems to work out among ourselves. Now, to me the rural practitioner problem is not one that we can solve. It is a great social question, this transfer of people from the farms to the cities; it comes with more machinery, with better roads, with gasoline and all that sort of thing, with the changed attitudes of people, with the desire to get more education for the children, and so on. If you will study the population curves, you will see that people are going into the cities from the country, and right now we are having an overproduction on the part of the farms; that to me can be solved only by a million or more farmers moving into the city and going into industry, because we have overproduction on the farms.

With these things in mind, it is evident that the profession cannot solve this problem by sending out a few more rural physicians. What they can do and should do is to provide competent, thoroughly trained men who will consider medicine a life of study, so that they can keep up with the great mass of information that is being gathered and is gathered every day, for in the long run our problem is simply this: Medicine in the last thirty years has gathered together a fund of information which, if it could be directly applied to the benefit of every individual, would prolong life and happiness, and change the whole current of human thought and life. The fund of information is available. We stand between that information and the public. It is our problem to provide for its distribution. If we make those provisions wisely, if we meet the situation, then we shall retain the mastery; if we fail, general education has reached such a level that others will begin to demand that there be a distribution of this information available to the human race, and we shall lose our position of mastery. I have confidence that we shall maintain it.

REPORT OF HEALTH LECTURES—1923-1924

Assigned under the Auspices of the State Joint Committee on Public Health Education, including Health Lectures Assigned in Detroit under the Joint Auspices of the State Joint Committee and the Wayne County Medical Society Committee on Public Education.

The Joint Committee on Public Health Education was organized December 13, 1921, on the initiative of the Michigan State Medical Society. The membership of this committee at present includes accredited representatives from the following organizations: Michigan State Medical Society, University of Michigan, Detroit College of Medicine and Surgery, Michigan Department ot Health, Michigan State Dental Society, Michigan Tuberculosis Association, Michigan State Nurses' Association, and the Michigan State Conference of Social Work.

The function of the joint committee is to present to the public the fundamental facts of modern scientific medicine for the purpose of building up sound public opinion relative to the questions of public and private health. It is concerned in bringing the truth to the people, not in supporting or attacking any school, sect, or theory of medical practice. It will send out teachers, not advocates.

Public health lectures are assigned free of charge through the medium of the University of Michigan Extension Division to organizations throughout the state interested in health education.

Interest in the Michigan health education program is very marked, as evidenced by the constantly increasing number of calls for these lectures. The following brief report will give some idea of the range and magnitude of this health education program, as conducted during the past year.

One or more health lectures were given by members of the speaking staff of the joint committee:

Prof. Barbara H. Bartlett
Juliet Bell, A. B.
C. E. Boys, M. D.
G. M. Brown, M. D.
E. W. Brubaker, A. B.
James D. Bruce, M. D.
R. W. Bunting, D. D. Sc.
Hugh Cabot, M. D.
E. I. Carr, M. D.
C. D. Camp, M. D.
J. T. Case, M. D.
A. W. Crane, M. D.
H. F. Crossen, M. D.
W. R. Davis, D. D. S.
Marjorie Delavan, A. B.
R. L. Dixon, M. D.
W. T. Dodge, M. D.
C. F. DuBois, M. D.
W. J. DuBois, M. D.
A. F. Fischer, M. D.
W. E. Forsythe, M. D.
W. H. Fraser
F. W. Garber, M. D.
Blanche M. Haines, M. D.
H. C. Hartwig, D. D. S.
Robert Henderson, M. D.
W. D. Henderson, Uh. D.
C. L. Hess, M. D.
P. M. Hickey, M. D.
G. Carl Huber, M. D.
Melita G. Hutzel
J. B. Jackson, M. D.
C. H. Johnston, M. D.
G. L. Kiefer, M. D.
A. Leenhouts, M. D.
G. L. LeFevre, M. D.
R. E. Loucks, M. D.
Carl McClelland, M. D.
R. W. McLain, M. D.
J. G. R. Manwaring, M. D
F. B. Marshall, M. D.
E. D. Mitchell, A. M.
Helen S. Mitchell
E. D. Nesbitt, M. D.
Estelle Norman, M. D.
W. S. O'Donnell, M. D.
Miss Ostrander
J. P. Parsons, M. D.
E. B. Pierce, M. D.
F. A. Poole, M. D.
H. E. Randall, M. D.
J. A. Reeder, M. D.
U. G. Rickert, M. D.
Nathan Sinai, D. V. M.
C. C. Slemons, M. D.
John Sundwall, M. D.
F. C. Warnshuis, M. D.
Llewellyn Wilburn, A. B
W. C. Hirn, C. E.

One or more health lectures were assigned to each of the following centers:

Albion	Grand Blanc	North Adams
Alma	Grand Haven	Olivet
Ann Arbor	Grand Rapids	Onsted
Baraga	Grattan Center	Ontonagon
Battle Creek	Grosse Pointe	Owosso
Bay View	Hancock	Pentwater
Benton Harbor	Highland Park	Pittsford
Berrien Springs	Hillsdale	Plainwell
Buchanan	Holly	Port Huron
Byron	Hopkins	Portland
Calumet	Horton	Redford
Cass City	Houghton	Reed City
Charlotte	Hubbell	River Rouge
Chelsea	Jackson	Rochester
Clare	Jenison	Rockford
Cohoctah	Kalamazoo	St. Clair
Constantine	Kent City	St. Johns
Deckerville	Lansing	Sand Creek
Detroit	Lakeview	Schoolcraft
Dixboro	McBain	Sebewaing
Dorr	Manchester	Shelby
Durand	Marquette	South Lyon
East Lansing	Marshall	Three Rivers
Eaton Rapids	Milan	Unionville
Ferndale	Monroe	Vernon
Flint	Morley	Waldron
Fruitport	Muskegon	Whitmore Lake
Galesburg	Muskegon Hts.	White Pigeon
Galien	Neeley	Ypsilanti
Gobles	New Troy	

Number of speakers assigned to give health lectures	87	
Number of health lectures given outside of Detroit	189	
Number of health lectures given, Detroit	76	
Total number of health lectures assigned		265
Average attendance per lecture outside of Detroit	170	
Average attendance per lecture in Detroit	620	
Total attendance on lectures outside of Detroit	32,000	
Total attendance on lectures, Detroit	47,000	
Total attendance of all lectures assigned		79,000
Increase in number of lectures assigned this year over last year		48%
Increase in total attendance this year over last year		160%

Editorial Comments

Our members' attention is directed to two editorials that are contained in this issue that impart important opinions upon existing conditions and practices. The address of President Wilbur of the A. M. A. and his recommendations as to organizational activity and our relationship to public health movements is most timely and wholesome. The report of the Judicial Council in regard to periodical physical examinations for corporations and societies for a fee outlines a most alarming situation. This latter report was considered by the House of Delegates as a committee of the whole and brought forth a most intense discussion that revealed very clearly the extent that this work had reached. It was condemned in a most emphatic manner. Michigan must therefore rid itself of this class of work and induce its members to refrain from being associated with it. Don't sell your services to a corporation or society for a small examining fee and permit them to obtain a large profit upon your services and at the same time eliminate your relationship with your patients and clientele. Read the report and think it over.

In the past the American Medical Association, through the House of Delegates, has definitely selected its place for the holding of the next annual meeting. This action made it imperative for the administrative officers to make the arrangements for the annual meeting at the place designated. As a result they were always at the mercy of the hotel managers and business men of the place selected and immediately the price for everything was boosted and hotel rates went up. In Chicago ordinary hotel rates were boosted in some instances one hundred per cent and we were at the mercy of unions and owners of meeting auditoriums. This year the House of Delegates wisely did not definitely select a place for the next annual meeting, but only gave expression of a preference for Atlantic City. This will enable the officers to deal with the situation and if satisfactory arrangements that are reasonable in their financial features cannot be entered into they then have the authority to go to some other locality where we will not be the victims of money sharks.

Chairmen of our standing committees are notified that their annual reports that are to be submitted to the House of Delegates at the Mt. Clemens meeting must be in the hands of the Secretary not later than August 10. Please be guided accordingly.

As noted on our editorial page, we are publishing in this issue the draft of the proposed revision of our Constitution and By-Laws that has been prepared by our revision committee and will be acted upon at the Mt. Clemens meeting. Delegates and members are urged to become familiar with its provisions. The consideration of this report will come up at the first session of the House of Delegates.

Here's a suggestion that is worth while and which it might be well to request your local newspaper editors to publish for the information of the public. Might it not be well for County Societies to pay for printing it in telephone directories?

FOUR RULES FOR CALLING THE DOCTOR

To most people the telephone is simply a well-trained servant, but to the busy doctor this same telephone is a hard master—a master who never allows his servants a minute in the 24 hours when he can feel that he is not on call. This is not the fault of the telephone, but is due to the thoughtlessness of many of the doctor's patrons, and below are some hints, by a doctor, as to the remedy.

First—When your doctor, in answer to your ring, says, "This is Dr. Blank," do not say, "Is this Dr. Blank?" or "Is this the doctor himself?" Just go ahead with the conversation.

Second—If the doctor does not answer his telephone in person, give your message (if possible) to the one who does answer. Most doctors' wives and office girls are quite capable of telling him that you want him to make you a visit, or what time you will be at his office, etc. Especially, if the doctor is out making calls, this is important, because it may save him miles of traveling if your wants are known so that he can be notified.

Third—As far as possible, let your doctor alone after he leaves his office in the afternoon. He is human, like other people, likes to forget his business after he gets home at night. How can he do this if

he is called to the telephone or to make calls every evening?

Fourth—Learn what your doctor's regular calling hours are, and plan your calls so that your call is in before he starts on these rounds, thus saving his time and enabling him to serve all his patients to the best advantage.

"Yes, yes," we hear you say—"I think a doctor should go whenever he is called." Quite true, but most of the doctors' hardships, hinted at above, are unnecessary, if his patrons would only be a little more thoughtful. About four-fifths of the calls he makes and the telephoning he has to do in the evening could just as well have been attended to earlier in the day.

Our curiosity has been aroused. We are eager to attend a state meeting of our sister associations in the west. This desire is inspired by the following extracts from the program for the annual meeting of the Wyoming State Medical Society:

"First day—7:30 p. m.—The Doctor's Annual Bath. Bring your bathing suits.—Demarris Hot Springs."

"Second day—8:00 p. m.—Smoker—Big Horn Basin."

"Third day—4:00 p. m.—Leave for Buffalo Bill's Hunting Lodge. South Fork Shoshoni River. All speeches limited to five minutes. Penalty for violating this rule will be a ducking in the Shoshoni (Stinking water) River. Banquet, followed by an *all-night* dance tendered by the Cody Club.

"Fourth day—Leave for a four-day camping trip in the Yellowstone."

Some entertainment, we would say. Now, are you not also desirous of attending such a State meeting?

While in Chicago, we were interested in the Clipping Bureau of the A. M. A. This bureau receives newspaper clippings from all over the country pertaining to doctors, practice of medicine, health, meetings and personal items. The Franks murder case has attracted much attention all over the country and the mental condition of the murderers has been widely commented upon. We also were enlightened as to their mental condition by well informed individuals. It was therefore amusing to read these clippings imparting the opinions of doctors 100 to 1,000 miles distant. Inconsistent would be a mild appraisal. Why does a man venture an opinion without full information? It is that desire to rush into print, to pass out conflicting conclusions that evidence unreliability that causes much adverse criticism and ridicule. It lowers the whole profession in the eyes of the public. By contrast, attorneys throughout the country did not give interviews on the Franks case or on the points of law involved. Why will doctors thus risk their reputation for a little cheap advertising?

Correspondence

The Editor of the Journal of the Michigan State Medical Society:

In the editorial comments of our Journal, June, page 270, are some comments about Soviet Russia. It is only four months since I returned from Russia, where I spent seven years under the rule of the Soviets. I do not wonder that Emma Goldman, being an anarchist, is against the Soviet government the same as she is against the government of the United States, and why she has been deported from here and from there. But if she writes that the Russian people have nothing gained from the revolution it is not true. The peasants, who are 85 per cent of the Russian population, received freedom and the lands from pomieshchiks (bog land owners in Russia), who before the revolution ruled the country and owned the biggest and best part of the land. The workers gained still more, because through their trade unions and Soviets (councils) they control the country. When the conditions in Russia are not very good it is not because of the Soviet regime, but because of eight years continual war; three years against Germany and five years civil war against former ruling classes. In the last war on the side of the former ruling classes (counter-revolutionists) were alike the central powers (Germany, etc., and the allies, England, France, Japan, United States, Archangel expedition, Poland, Checho-Slovakia, etc. Eight years of war and unseparated companions of war: devastation, hunger, epidemics ruined the country all together. Only three years passed has Russia had peace.

For the last three years the conditions in Russia have been much improved. At present time the conditions there are of course not so good as in the United States, but better than in some other countries, like Germany, Austria, Poland, etc. In Europe, Russia is the only big country with stable currency. The new Russian currency unit Chevoutz is more stable than a French franc or even English pound and it is a par with five American dollars. The sanitary conditions there are now better than before the war; no more epidemics of cholera, thyphus and even small pox in Russia is left than in Michigan State for instance. The only epidemic prevailing now in Russia is malaria, combatting of which is very difficult on account of the enormity of the country and the lack of quinine. The present Soviet government pays more attention to preventive medicine than any other country. There is more safety in Soviet Russia than in some other civilized countries. There are less hold-ups, murders, graft, etc. than even in the United States. The economical condition in Russia, at present time bad, are nevertheless improving every day. Why the Russian people stick to their Soviet regime.

Fraternally Yours,

M. A. RIVKIN, M. D.,

The Editor of the Journal of the Michigan State Medical Society:

In one capacity or another, directly or indirectly, you are engaged in combatting preventable diseases which will cost the people of the United States this year over 3,000 millions of dollars, cause inestimable suffering and result in approximately 500,000 deaths.

Certain phases of preventive medicine are developing slowly, with consequent loss of health and life, primarily because adequately trained men and women are not available. In other fields of public health work, the personnel has increased so rapidly that there are many at work who have not had the opportunity for training which they desire.

To meet in some measure this emergency, Public Health Summer Schools will be conducted this year (at the suggestion of the United States Public improving every day. That is why the Russian people versity of California, the University of Iowa and the University of Michigan. Here all those now engaged in public health work and all planning to have a part in preventive medicine may get intensive, systematic training under leading specialists.

The announcements of the Public Health Summer Schools are now ready and may be obtained upon application. Requests should be sent directly to the universities.

Very truly yours,

H. S. CUMMINGS, Surgeon General.

The Editor of the Journal of the Michigan State Medical Society:

I regret to say that we have had the pernicious system of lodge contract practice active for years and I never could understand why any medical man would consider such a proposition, as this class of practice is unprofessional. I am surprised that these lodges fail to see that under this plan their members cannot receive proper medical service. It is a pleasure to report that recently all of the physicians here signed an agreement that none of us would engage in this class of practice, consequently this evil has been removed. This is evidence what organization can do for the benefit of the general public as well as for the profession.

I wish to thank those physicians who kindly cooperated in this important matter. These orders are no doubt excellent and will achieve success if they keep away from the lodge doctor feature. "The Moose" and "The Eagles" of Boyne City have at last been educated to the fact that these lodges cannot operate this system here.

Yours very truly,
HARRY E. SHAVER.

State News Notes

COLLECTIONS

Physicians' Bills and Hospital Accounts collected anywhere in Michigan. H. C. VanAken, Lawyer, 309 Post Building, Battle Creek, Michigan. Reference any Bank in Battle Creek.

Owing to illness in physician's family one of the finest general practices in Detroit will be sold. Cash income exceeds $20,000 yearly. Location ideal. Equipment and furnishings the best. Competition negligible. Sale price at equipment invoice is $5,000. Included are all home furnishings in situ., valuable appointments and a thorough introduction. Packard coupe optional. Lady office assistant knows entire clientele and will remain if desired.

Fees are excellent. No night calls and no confinements except at hospital. Surgical field unlimited. Ideal place for country physician of personality and ability who wants a wider field.

This is a real opportunity. No answer desired unless you are a successful physician, can come and investigate and have the money.

Possession given anytime between May 1st and July 1st. C/O Journal.

NURSES' private home, invites convalescents and invalids; best of care, fine location. R. Rs. N. Y. C. and Interurban; best of references given. For particulars write Bessie Bileth, 566 Ely Street, Allegan, Mich.

WANTED—A general practitioner for an excellent location in southern Michigan, city of 15,000 population. Excellent schools. An Episcopalian or Catholic preferred. Reply c/o The Editor.

FOR SALE—General Practice in the City of Jackson. All equipment bought in the last four years and of excellent quality. Will sell practice, with professional introduction, and equipment for invoice less 20 per cent. Practice amounts to $6,000 a year. Reply care of State Society.

Read the proposed new Constitution and By-Laws printed in this issue. It will come up for adoption at our annual meeting.

Dr. Don H. Silsby of St. Johns, will leave July 1 to enter practice in Springfield, Missouri.

Dr. and Mrs. A. Noordewier, Grand Rapids, are spending two months of travel in Europe.

The Health Officers Association of this country met in annual session in Lansing, June 17 and 18.

Dr. Ferris N. Smith, Grand Rapids, returned the middle of June from a six weeks' trip in England and France.

Advertisers discontinue ads that do not bring business. We cannot secure advertising if you fail to patronize those firms who use advertising space in the Journal. Send them your business.

The following comprises a list of officers of the Wayne County Medical Society elected at the annual meeting on May 19, 1924: Presdent, Wm. J. Stapleton, Jr. Vice-President, Herman H. Sanderson; Secretary, Richard M. McKean; Trustee, Frank A. Kelly.

W. H. Marshall of Flint, addressed the Clinton County Medical Society.

District meeting, held at Flint in April was well attended. Doctors from Wayne County and Saginaw, Lapeer, and Bay county were well repayed for attending. About 175 in all were in attendance.

The District meeting at Lapeer was attended by a few of members from Genesee it being our regular meeting prevented a larger attendance.

Offices in the First National Bank building are opened, several doctors moving into the same.

During rather a heated discussion at one of the meetings regarding placing ads in the local paper when several doctors announced their removal to other buildings Don Knapp suggested this for those who had not moved. (Dr. Blank doing business at the same old stand.)

Dr. W. A. Giffin of Deckerville, Mich., is taking two months vacation in Europe.

There will be a Phi Rho Sigma Dinner, "not too scientific," at the State Meeting at Mt. Clemens in September. Will all Phi Rho's in the State please note. The Chairman wants to know of all those who will be in Mt. Clemens.

Dr. James H. Boulter of Detroit is spending two months in Europe, after which he will locate in Los Angeles, California.

With present progress in building, the new Butterworth Hospital, Grand Rapids, will be completed by January 1st.

Remember, our annual meeting will be held in Mt. Clemens, September 9, 10 and 11. Full details in our August issue.

Dr. C. S. Davenport has recently been appointed instructor in the Department of Roentgenology, University Medical School.

Dr. C. D. Hasley of the Department of Roentgenology, University Medical School, recently resigned from the medical school to enter private practice in Detroit.

Dr. R. J. Hutchinson of Grand Rapids, will spend July and August in his camp in Canada.

Dr. John Kremer, Grand Rapids, spent three weeks in June in the St. Louis Clinics.

Dr. E. F. Merrill of the Department of Roentgenology has resigned from the University Medical School to enter the Department of X-Ray Therapy at the Mayo Clinic.

Dr. Nils Westermark of Stockholm, Sweden, was the guest of the Department of X-ray, University Medical School, for two weeks during the month of May.

Dr. Harriet S. Taylor has resigned from the Department of Pathology, University Medical School, to be effective July 1st, because of ill health.

Dr. Warthin, president of the local chapter of Sigma Xi, recently entertained the executive committee, Dr. Kellogg, Professor Richtmyer, Professor Ward of the University of Illinois, Dr. Ellery of the Western Electric, Professor Eigenmann of the University of Illinois Professor McClung of the University of Pennsylvania, and Mr. C. E. Davies of New York. Addresses were made by Doctors Kellogg, Eigenmann, Professor Ward and Professor Richtmyer to the local society of Sigma Xi.

Professor Pegram of Columbia University visited the clinics and laboratories of the University Medical School recently.

Doctors Warthin and Weller are engaged at the present time in a new research on toxicity of aluminum. A research fund of $1,000 for six months was granted the laboratory by the Manufacturers' Research Company of New York.

Dr. A. S. Warthin read a paper before the Association of American Physicians on "Thrombophlebitis of Hepatic Veins" at the recent meeting of the Association in Atlantic City.

Dr. A. S. Warthin has accepted an invitation to deliver three lectures in Portland, Oregon, on June 11, 12 and 13, on the special lectureship endowment in the Medical School, University of Oregon. He will also deliver three lectures in Logan, Utah, before the Utah State Medical Society on his return.

Dr. L. M. Warfield gave a lantern slide lecture at Syracuse at the annual dinner and meeting of the A. M. P. O. Chapter at Syracuse University on "Occult Tuberculosis."

The following papers were read at the May meeting of the Association of American Physicians at Atlantic City by members of the Department of Internal Medicine: "The Value of the Electrocardiogram in the Diagnosis and Treatment of Heart Disease with Special Reference to the Significance of Abnormal Ventricular Complexes," by Dr. F. N. Wilson. "Liver Injury in Thyrotoxicosis as Evidenced by a Decreased Functional Efficiency," by Doctors L. M. Warfield and John B. Youmans. "The Nephropathic Effect of Some Amino-Acids," by Doctors L. H. Newburgh and P. L. Marsh.

Dr. Frank N. Wilson, Associate Professor in Medicine, University Medical School, has been promoted to Professor of Medicine. Doctors G. R. Herrmann and P. L. Marsh have been promoted to the rank of Assistant Professor in the Department of Medicine.

Dr. Harry Newburgh entertained Professor Petren of the Department of Medicine in the University of Lund, Sweden, during his visit at this University.

Dean Hugh Cabot has been made a fellow of the American Surgical Association.

Dr. Frederick G. Novy, Professor of Bacteriology and Director of the Hygienic Laboratory, University Medical School has been elected to membership in the National Academy of Sciences.

Dr. I. W. Greene of the Department of Medicine, University Medical School, has resigned to take up private work in Owosso.

Dr. Noel F. Shambaugh of the Department of Medicine, University Medical School, has been made a fellow of the National Research Council.

Doctors Louis M. Warfield, Frank N. Wilson, L. H. Newburgh, P. L. Marsh, G. R. Herrmann and John B. Youmanns attended the recent session of the Association of American Physicians and the Society for Clinical Investigations in Atlantic City, May 2 to May 6.

Dr. Louis M. Warfield, Professor of Internal Medicine, University Medical School, recently addressed the annual meeting of Alpha Omega Alpha at Syracuse, New York.

The monthly Practitioners' Clinics, held at the University Hospital, will be discontinued during the summer months and will re-open the second Wednesday in October. The last Practitioners' Clinic, which dealt with the use of serums and vaccines in all departments of medicine and surgery, was very well and enthusiastically attended.

The Department of Otolaryngology, University Medical School, gave a clinic to the Detroit Otolaryngological Society on April 23, 1924. The clinic was very well attended by otologists throughout the state, as well as members of the Detroit group.

Dr. H. B. Mettel of the Department of Pediatrics and Contagious Diseases has completed his service at University Hospital and will enter private practice in Indianapolis.

Professor J. Finkelstein from Berlin, was recently the guest of Dr. Cowie. Dr. Finkelstein talked to the medical faculty and student body on "The Effect of High Sugar Feeding on Acute Intestinal Indigestion."

Professor Robert Bridges, poet laureate of England, recently addressed the junior and senior classes on reminiscences of his early practice in London in the early sixties. Sir Robert Bridges was casualty physician to St. Bartholomews and physician to the Great Ormond Street Hospital for Sick Children.

Doctors D. M. Cowie, J. P. Parsons and T. Raphael have recently completed a series of investigations on "Insulin and the State of Mental Depression," which have been submitted for publication.

Miss Pauline Tessmer, Ph.C., of the Department of Pediatrics and Contagious Diseases, has accepted a position as chemist at the University of California. from Havergil College, Toronto.

Deaths

George W. Fralick, M. D., Maple City, Michigan F. A. C. S., Detroit College of Medicine and Surgery, died May 20, 1924, at the age of 53.

County Society News

GENESEE CO.

The Genesee County Medical Society met for noon luncheon at the Hotel Dresden, March 19, 1924. Dr. William Marshall, Flint, Mich., addressed the Society on "Syphilitic Aortitis." Mr. Wm. Riddell, of Hartz & Co. presented the Genesee County Medical Society with a bronze tablet, bearing the inscription: Genesee County Medical Society. Accepted by Dr. W. Winchester, President of the Society.

The Genesee County Medical Society met for noon Luncheon at the Hotel Dresden, April 9, 1924, Sgt. Eddy, representing Major-General Allen, Chairman of the American Committee for relief of needy German children, gave a short talk on this subject. The support of the Genesee County Medical Society was promised.

Following is the program for the Sixth District Meeting of the State Medical Society, held in Flint at Hotel Durant on Wednesday, April 16th, 1924 at 5 P. M.:

"Plastic Surgery of the Hand," Dr. Allen Knavel, Chicago, Ill.

"Some Pitfalls in Diagnosis," Dr. Byfield, Chicago, Ill.

"How to Avoid Malpractice Suits," Dr. Frank Tiballs, Detroit, Mich., and Mr. Barbour, Detroit, Mich.

There was an attendance of about 250 doctors from neighboring societies.

The Genesee County Medical Society met for noon luncheon at the Hotel Dresden, April 30, 1924. Dr. David R. Clark of the Detroit Receiving Hospital gave a very interesting talk on "A Practical, Modern Concept of Mental Disease."

The Genesee County Medical Society met for noon luncheon at the Hotel Dresden, May 14, 1924. Dr. Loree of St. Joseph's Hospital, Ann Arbor, Mich., addressed the society on "Hospital Organization."

Geo. J. Curry, Secretary.

IONIA-MONTCALM CO.

The Ionia-Montcalm Medical Society met Friday evening, May 16, 1924, at the Hotel Belding, Belding, Mich. Twenty members were present. Dinner was served at 7 o'clock, after which the following program was presented:

Subject, "Traumatic Diaphragmatic Hernia." Speaker, Dr. Robert Hutchinson, Grand Rapids, Mich. Dr. Hutchinson presented a most interesting and instructive paper, illustrating the talk by lantern slides and X-ray plates. This very unusual hernia followed an accident in which the patient received a crushing injury by having the automobile he was driving demolished by a train. The patient was taken to the hospital in an unconscious condition. Following a series of X-ray plates, a hernia of diaphragm was determined. Some of the plates demonstrated very clearly the position of the stomach in the left thorax reaching as high as the third rib. The hernia was approached by doing a thoracotomy, and the stomach, omentium, spleen, and part of transverse colon found filling the left thorax. Finding that the viscera could not be replaced into abdominal cavity by the thoracic route alone, an abdominal incision was made. It was found that a little traction from below made the reduction much easier. After reducing the hernial mass the tear in the diaphragm was repaired.

The patient made an uneventful recovery after passing the first three or four stormy days immediately following the operation. The patient not having been discharged from the hospital, consented to come with Dr. Hutchinson and was presented to the society for an examination, showing his excellent condition following such a severe major operation.

The society expressed themselves as being very grateful to Dr. Hutchinson for presenting this extremely interesting case.

Following this Dr. Wm. Northrup, Grand Rapids, Mich., used for his subject, "The Competent Heart." Dr. Northrup discussed the subject in a masterly manner, covering in detail the essentials in diagnosis, pathology and treatment.

Dr. J. M. Johnson of Lake Odessa was unanimously elected a member of the society.

F. A. Johnson, Secretary.

HOUGHTON CO.

On Tuesday evening, Juune 3, in place of the regular monthly meeting of the Houghton County Medical Society, a banquet was held at the Douglas House, Houghton, Michigan, in honor of Dr. Joseph E. Scallon in celebration of his fiftieth anniversary in the practice of medicine. There were twenty-six doctors present. The following program was enjoyed:

Toastmaster—Dr. W. H. Dodge.

"Dr. Scallon as I have known him"—Dr. W. K. West.

I dwell with thee: tho thou art far removed,
Yet art thou near.

Orchestra—"Hail, Hail, the Gang's All Here."

An Appreciation—Dr. H. M. Joy.

Then give to the world the best you have
And the best will come back to you.

Orchestra—"It Ain't Goin' to Rain No More."

"Dr. Scallon the Man"—Dr. J. W. Moore.

Make new friends, but keep the old;
Those are silver, these are gold.

Orchestra—"Annie Laurie."

"Facts and Fancies"—Dr. A. F. Fischer.

With such a comrade, such a friend
I fain would walk till journey's end.

Orchestra—"We Have No Bananas Today."

"Friendship"—Dr. Alfred LaBine.

I cannot pay my debt,
For all the love that he has given,
But Thou, good Lord, will not forget
His due reward, bless him in earth and heaven.

Orchestra—"There's a Long, Long Trail."

"Our President"—Dr. Charles E. Rowe.

This is the reason why all men love you;
Truth to life is the charm of art.
Other men may soar above you—
You keep close to the human heart.

Presentation of Loving Cup by Dr. C. E. Rowe.

Orchestra—"Auld Lang Syne."

Response by Dr. J. E. Scallon.

The banquet committee consisted of Doctors J. W. Moore, W. K. West, G. C. Stewart and Alfred LaBine.

G. C. Stewart, Secretary.

GRATIOT-ISABELLA-CLARE CO.

The May meeting of the Gratiot-Isabella-Clare County Medical Society was held in the Alma city hall, Tuesday, May 20. The speaker of the evening was Dr. R. Earle Smith of Grand Rapids, who read a paper entitled, "A Comparative Study of the Cutaneous Diseases of the Mouth, and then showed about 150 colored slides to illustrate his subject. The slides were certainly good, making the subject very plain.

Any County Society will be well satisfied to have Dr. Smith for one of their meetings.

E. M. Highfield, Secretary.

CALHOUN CO.

The fifth regular meeting of the Calhoun County Medical Society was called to order by President Haynes in the dining room the the Sanitarium, Wednesday, May 7th, at 8:12 P. M.

It was moved by Dr. Kingsley and seconded by Dr. Harry B. Knapp that the minutes of the preceding meeting be apporved as printed in the Bulletin. The motion was carried.

The following bills were read, all of which had been passed by members of the Board of Directors present; Post Tavern Co., cigars, $4.75; Coggan, flowers, Dr. Henderson, $5.00, Dr. Eggleston, $2.50; Phoenix Printing Co., printing Bulletin and statements, $18.00; Dr. T. L. Squier, postage and mailing Bulletin, $2.36. Dr. Godfrey moved that the bills be paid. Seconded and carried.

A communication was read from Dr. Capron suggesting that the Society extend an invitation to the Northern Tri-State Medical Society to hold the April, 1925, meeting in Battle Creek. Dr. Kingsley moved that the plan outlined be adopted and that an invitation be extended to the Northern Tri-State Medical Society to meet in Battle Creek in April, 1925. Seconded by Dr. Allen and carried.

Dr. Gesner read a report from the Necrology Committee relative to the deaths of Drs. Gillette and McLennon, as follows:

The Necrology Committee begs to report as follows:

Dr. H. E. McLennon, of Bellevue, a former member of the Calhoun County Medical Society and practitioner of Battle Creek, died April 14th, 1924.

Dr. McLennon was born in 1875 and graduated from the Detroit College of Medicine in 1900. In 1917 he was commissioned Captain in the Medical Corps, United States Army, and served in France throughout the war. While in service he contracted a chronic Antrum infection, which was indirectly the cause of his death.

Dr. McLennon was a physician of ability and a friend to tie to.

The Calhoun County Medical Society joins in offering his family our sympathy and best wishes in their bereavement.

Dr. Leon Michael Gillette, a former president of this society, died at his home in this city April 16th, 1924, of Bulbar Paralysis, the final stage of an organic brain disease. It manifested itself first in September, 1906, by a Cerebral Hemorrhage, compelling him to relinquish his practice, which he was never able to resume.

Dr. Gillette was born of French parentage in Missouri,, October 20th, 1860, and while a child came to Battle Creek with his parents. Left at the age of 11 to his own resources, he dominated his after life, ambition to achieve something worth while and an untiring capacity for work. He remained at school and supported himself by doing chores about the city and working on farms during summer vacations. After graduating from the High School, he started for Ann Arbor, arriving there without funds. He intended to prepare himself for school teaching. After two years of literary work he decided to study medicine and entered the medical department, graduating with the class of 1887. During this period he was compelled to work his way. Coming back to Battle Creek with meager funds, he began practice. After patient effort he built up one of the largest practices in this country. Too little space is afforded here to chronicle the many good things that could be said of this natural physician. He was unassuming, gentle, beloved by his patients, and by those who knew him best.

He has held every public trust that was within the gift of the citizens of this city, Coroner, Member of the School Board, Health Officer, Councilman, and Mayor.

He was always a friend and adviser of the young physician, whom he tried to assist, remembering, perhaps, his own early struggle.

It is something to ponder, what he might have achieved had he retained his health to the present day.

S. R. E.

Respectfully submitted,

WILFRED HAUGHEY
W. L. GODFREY
G. B. GESNER

Dr. Church moved that the report be accepted and incorporated in the minutes of the Society. Seconded and carried.

Dr. Clover called the attention of the Society to a bill pending in the United States House of Representatives, relative to adequate labeling of corrosives and caustic poisons. Dr. Van Camp moved that the Society go on record as favoring this bill and that the Secretary be instructed to communicate with the author of the bill and with Representative A. B. Williams to that effect. Seconded and carried.

Dr. Squier moved that an expression of appreciation and gratitude be expressed to Dr. Kingsley's son, Paul C. Kingsley, who presented the Society with a walnut gavel and block made by himself. Seconded by Dr. Wafer and unanimously carried.

The members then adjourned to the Sanitarium Chapel where an instructive program was presented by members of the Sanitarium staff, under the chairmanship of Dr. Roth.

Dr. Hubley gave a paper on Insulin, which was discussed by Doctors Murray, Clover and Gubbins. Dr. Verity read a paper on "Polycystic Kidney"; Dr. Stegman presented a paper on "Fundus Findings in Kidney Lesions," and this was followed by Dr. Jeffrey who presented a paper on "Banta's Disease." The latter paper was discussed by Dr. Stewart.

Dr. J. Kellogg said a few words of welcome and invited the Society to "come again."

Dr. Eaton moved a vote of thanks to the Sanitarium management for the entertainment. Seconded and carried.

It was moved, seconded and carried that the meeting adjourn. Attendance at the dinner, 66; at the meeting, 79.

T. L. SQUIER, Secretary.

FIFTH COUNCILOR DISTRICT

The Fifth Councilor District, under the leadership of Councilor B. R. Corbus, held its district meeting in Grand Rapids on May 26th. Clinics were held in all three hospitals, during the morning and afternoon.

At 3:30 p. m. Dr. Hugo Freund of Detroit addressed the members on the subject of Neurological and Visceral Syphilis.

A dinner was served at 6:30 p. m. and attended by some 200 doctors. After the dinner Dr. R. R. Smith gave an illustrated travelogue of his trip to Australia and New Zealand.

Dr. J. M. Finney, Professor of Surgery, Johns Hopkins College and Hospital, Baltimore, read a paper on "Recent Advances in Gastric Surgery." Dr. Finney's paper was illustrated by lantern slides.